For Reference

NOT TO BE TAKEN FROM THIS ROOM

Ex libris
universitatis
albertaensis

HIGH LEVEL BINDERY
10762-82 Ave., Edmonton
"The Highest Level of
Craftsmanship"

Digitized by the Internet Archive
in 2023 with funding from
University of Alberta Libraries

https://archive.org/details/Ranson1970

THE UNIVERSITY OF ALBERTA

A CURRICULUM MODEL FOR PHYSICAL EDUCATION

by

© DONALD G. RANSON

A THESIS

SUBMITTED TO THE FACULTY OF GRADUATE STUDIES

IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE DEGREE

OF MASTER OF ARTS

DEPARTMENT OF PHYSICAL EDUCATION

EDMONTON, ALBERTA

FALL, 1970

ACKNOWLEDGEMENT

I appreciate greatly the guidance given me by Dr. Pat Austin who served as Chairman of this thesis. I would like to thank the other members of my committee, Dr. Howell and Dr. Kellum for their kind assistance in helping me complete the thesis.

It is appropriate to express my deep gratitude to Dr. Robert Routledge who recognized the importance of research in physical education curriculum. Dr. Routledge met with tragic death while carrying on his professional services as a physical educator. It is with sadness and regret that his brilliant career was ended.

I would also like to thank my wife Gail whose capable assistance not only enabled me to finish the thesis, but also to obtain my Master's degree.

ABSTRACT

On the basis of the opinion expressed by many writers that physical education lacks a theoretical framework upon which to build curriculum, a model was constructed to provide a structure for the subsequent development of curriculum for physical education. This necessitated identifying the elements and their interaction which would serve as an operational procedure for developing a curriculum.

The model depicted curriculum as an output of the curriculum development system and an input into the instructional system; thus curriculum guides instruction. In this light curriculum was defined as "a structured set of intended learning outcomes" for the students to acquire.

The curriculum development system was comprised of six basic elements: (1) philosophy, (2) general aim and objectives, (3) structure of knowledge and the nature of learning, (4) source of curriculum, (5) criteria for selection of content, and (6) scope and sequence. Each element, when defined and applied to the field of physical education, separately affects the selection of intended learning outcomes. Flexibility in curriculum is essential.

The instructional system consisted of three operations: (1) planning, organizing the means to attain the intended learning outcomes (2) executing, carrying out the plan and (3) evaluating, comparing the actual learning outcomes with the intended learning outcomes.

A hypothetical school situation was described and the model was then used as a criterion for outlining the process of developing a

senior boys' physical education curriculum. The purpose of this was to test the validity of the model. It was concluded that the model is operational and provides a theoretical foundation for the subsequent development of physical education curriculum.

TABLE OF CONTENTS

Chapter		Page
I	STATEMENT OF THE PROBLEM	1
	Introduction	1
	The Problem	4
	Deliminations	4
	Definitions and Explanation of Terms	5
II	REVIEW OF THE LITERATURE	7
	Functions of Models	7
	The Need for Curriculum Theory	10
	The Need for Curriculum Research in Physical Education	16
III	PROCEDURES	20
	The Understanding of Curriculum	20
	The Elements of the Curriculum Development System	22
	The Operational Model	24
	Theory into Practice	27
IV	A. ELEMENTS OF THE CURRICULUM DEVELOPMENT SYSTEM	29
	Introduction	29
	1. Philosophy	29
	2. General Aim and Objectives	36
	3. The Structure of Knowledge and the Nature of Learning	45
	4. The Source of Curriculum Content.	61
	5. Criteria for Selection of Content	71
	6. Scope and Sequence of Curriculum	87
	Conclusion	95
	B. THE CURRICULUM	96

Chapter Page

Intended Learning Outcomes 96

C. INSTRUCTIONAL SYSTEM 98

Planning 99

Executing 99

Evaluating 99

V HYPOTHETICAL TEST FOR THE MODEL. 103

Purpose 103

Hypothetical Situation 103

Application of the Model 104

VI SUMMARY AND CONCLUSIONS 114

Summary 114

Conclusions 115

Recommendations 116

BIBLIOGRAPHY 118

LIST OF FIGURES

Figure		Page
1	Elements of the Curriculum Development System	26
2	An operational Model for Developing a Physical Education Curriculum	28

CHAPTER I

STATEMENT OF THE PROBLEM

Introduction

It is generally agreed that change is necessary for societies to advance politically, socially, economically, technologically, and educatively. Few people deny that change in these areas is a continuous and dynamic process. Organizations change to keep up with the times. But from another point of view, the salient feature of a successful organization is its stability.[1] Organizations should operate basically the same way today as they did yesterday. Change therefore should not be sporadic. What is needed is a system which outlines the procedures for establishing and maintaining order for change.

Changes in many areas of education are being carried on continuously including educational administration, educational psychology and in the subject fields. Important developments are occurring in the area of curriculum within the school systems.

According to Johnson,[2] educational researchers have traditionally been more concerned with improving education than with understanding it. The recent curriculum reform projects have dealt more specifically with improving school programs than with gaining

---

[1] R.F. Campbell, J.W. Getzels, and J.M. Lipham, Educational Administration as a Social Process (New York: Harper and Row, 1968), p. 398.

[2] M. Johnson, Jr.,"Definitions and Models in Curriculum Theory," Educational Theory, XVII (April, 1967), 127.

increased insight into the nature of curriculum. Johnson hoped that more time might be spent in constructing a curriculum theory primarily for understanding curricular phenomena. In this way, ultimately, the practitioner might be benefited.

Some research over the past few years has been directed towards curriculum development in various subject areas. As a result, a new mathematics, a new physics, and a new science curriculum have evolved. Little comprehensive research in physical education curriculum has been conducted, other than a few studies dealing with measuring attitudes toward and interests in physical education, evaluating existing programs, and improving programs.

Although several physical educators have attempted to outline specific programs within their own school systems, it appears that no systematic way of deriving programs has been devised to aid them. Without a specific curriculum design certain aspects of the programs are likely to remain disparate, disorganized and purposeless.

General curriculum guides formulated by provincial committees sometimes tend to be too rigid in structure. If this is the case, then all school districts must follow the same curriculum dictated by the guide. By no means is one curriculum appropriate for all students at one level throughout the province, for it fails to meet individual needs.

Common complaints about physical education programs and curriculum guides are that students are given a series of unrelated activities which appear to be used repetitively from year to year. Students are not sure what they are learning in physical education. The emphasis is on keeping active and having a good time. A

curriculum theory is derived through a process of critical analysis and reason substantiated by study and observation.[3] With this theoretical approach applied to the field of physical education then organization and direction would ensue and many of these problems should disappear.

A further confusion exists over terminology. Oftentimes curriculum is used synonymously with program or instruction. Sometimes a wider interpretation of curriculum is used to include everything that happens to a student at school.[4] This certainly appears to be too broad a definition for such an important term. Johnson stated, "Surely curriculum must play some role in guiding instruction."[5] Since physical education curriculum lacks a theoretical foundation, one must be developed, first of all, to clarify its terminology, secondly, to organize the structure of the theoretical framework, and thirdly, to identify and show the relationships between the elements or components which make up the structure.

An appropriate way to represent curriculum theory is to use a model. In a report for the Fund for the Advancement of Education, Goodlad made a key recommendation regarding curriculum reform.[6] He

---

[3] R. Bent, Secondary School Curriculum (Boston: D.C. Heath & Co., 1969), p. 5.

[4] Ontario Association for Curriculum Development, Curriculum Development in a Decentralized Educational System, Fifteenth Annual Conference (Toronto: OACD, November, 1966), p. 20.

[5] Johnson, op. cit., p. 130.

[6] J. Goodlad, School Curriculum Reform in the United States (New York: Fund for the Advancement of Education, 1964).

stated that models should be created to demonstrate how a comprehensive school program can be developed. In the terms of Campbell, et al.,[7] a model is a tool for generating inquiry, a framework for examining practice and in general, it contributes to understanding.

Consequently, a curriculum model needs to be developed in physical education to aid in (1) generating an inquiry about a physical education curriculum; what it is; what its purposes are; and (2) outlining a framework to develop programs. If the model satisfies these requirements then it should be declared operational.

The Problem

The purpose of this study is to construct a model which will provide a structure for the subsequent development of curriculum for physical education. This model will identify the structural elements and their interaction, which will serve as an operational procedure in developing curriculum for physical education.

It is also the purpose of this study to test the validity of the model by applying the model in a hypothetical school situation.

Delimitations

This study does not attempt to develop extensive lists of specific objectives or intended learning outcomes applicable to a given school situation, nor does it seek to describe the content to be taught in planning an instructional program.

A practical evaluation of the model will not be completed.

---

[7] Campbell, op. cit., p. 407.

However, a hypothetical school situation will be described in which the model will be used to serve as a guide and criteria for outlining the procedures for developing a specific curriculum.

Definitions and Explanation of Terms

Physical Education: that portion of the educational process which utilizes physical activity as a means of influencing the total, integrative behaviour of youth to effectively meet the demands of a changing society.

Curriculum: a structured set of intended learning outcomes, the purpose of which is to prescribe the results of instruction.[8]

Instruction: the interaction between a teaching agent and one or more individuals intending to learn.[9]

Curriculum Development System: the process by which curriculum is formulated. It includes several basic elements considered necessary to developing curriculum.

Instructional System: synonymous with program development. It includes three steps: planning, executing, and evaluating. Planning refers to deciding which learning experiences are likely to produce the intended learning outcomes. Executing refers to the process of teaching the learning experiences. Two sets of interaction may be involved in teaching. One is the transaction between the student and the environment manipulated by the teacher and the other is an interpersonal interaction between the teacher and the student. Evaluating refers to a comparison of actual learning outcomes with the intended learning outcomes.

---

[8] Johnson, op. cit., p. 130.

[9] Ibid., p. 137

Actual Learning Outcomes: knowledges, techniques or values acquired by the learner after a period of instruction.

Intended Learning Outcomes: knowledges, techniques or values prescribed for learning before instruction takes place.

Curriculum Model: a carefully engineered framework designed to identify the various elements among complex, related and interacting phenomena in educational curriculum research.

CHAPTER II

REVIEW OF THE LITERATURE

Functions of Models

In order to discuss the functions of models in educational research, it is first necessary to review current opinions as to what constitutes a model.

Downey differentiated between a conceptual model and a theoretical model.[10] The conceptual model usually preceeds the theoretical model. The purpose of the conceptual model in education is to mirror an educative system which is a complex and dynamic system in itself. It systematizes existing knowledge without necessarily generating new knowledge. The theoretical model, on the other hand, is a construct or a mental image of the assumed reality of a particular set of phenomena. It is assimilated from the structures and laws of a known field and then presumed to be a responsible image of the reality of an unknown field. Therefore, the form of the known field provides the tentative form of the unknown field.

Meadows was less specific when he used the term model to mean a variety of things such as experimental design, postulate sets, deductive paradigms, theories, concepts, and even language itself.[11] Parsons, in the most general sense of the term, referred to a model as

---

[10] L.W. Downey, The Secondary Phase of Education (New York: Blaisdell Publishing Co., 1965), pp. 63-4.

[11] P. Meadows, "Models, Systems, and Science," American Sociological Review XXII (February, 1959), 1.

"an ideal type" of structure or process, arrived at by hypothetical reasoning from theoretical premises, which is then used through comparison with empirical data to analyze such data. In this sense a model is a theoretical scheme.[12]

Griffiths related a model to a systematic presentation of ideas. Keeping in mind the importance of a model being a systematic structure, he likened the model to an "open system" which is a complex of elements in mutual interaction relating and exchanging matter with its environment. The following represents Griffiths conception of the open system:[13]

1. Inputs and outputs.
2. Maintenance of steady states.
3. Self-regulatory process.
4. Equifinality-identical results are obtained from different initial conditions.
5. Dynamic interplay of sub systems.
6. Feedback processes - to maintain steady state.
7. Progressive segregation.

Deutsch stated that models were "sets of symbols and operating rules...(having) some structure, i.e., some pattern of distribution of relative discontinuities and some 'laws' of operation."[14]

---

[12] T. Parsons, "An Approach to Psychological Theory in Terms of Theory of Action," Psychology: A Science, ed. Sigmund Koch (New York: McGraw Hill, 1959), III, p. 695.

[13] E. Griffiths, "Use of Models in Research", Educational Administration: Selected Readings, eds. E. Hack et. al., (Boston:Allyn and Bacon Inc., 1965), pp.346-57.

[14] W. Deutsch, "Mechanism, Organism and Society: Some Models in Natural and Social Science," Philosophy of Science, XVIII (July, 1951), 230-31.

Three roles of models were established by Meadows; they are pictorial or representational (or descriptive), explicative, and verificatory.[15]

Tyler,Beauchamp and Herrick explained their use of models in relation to curriculum development. Tyler used a model to present a simplified picture of the structure and process of classroom instruction. The model included such elements as teacher, pupils, objectives of instruction and learning outcomes. This allowed for a basis upon which the teacher could focus his observations and arrange and analyze his data.[16]

Beauchamp believed that a general curriculum model for elementary school should be logically derived and at least partially tested in operation.[17] Herrick stated that a curriculum design becomes more usable in improving educational programs if it has as its major organizational focus, the problems of selecting, organizing and teaching the learning experiences of children and youth.[18]

---

[15]Meadows, op.cit., p. 8.

[16]R. W. Tyler, "The Contribution of the Behavioural Sciences to Educational Research," First Annual Phi Delta Kappa Symposium on Educational Research, ed. F. Banghart (Bloomington, Indiana: Phi Delta Kappa Inc., 1960), p. 57.

[17]Beauchamp, Curriculum Theory (Wilmette, Illinois: The Kagg Press, 1961), p. 97.

[18]V.E. Herrick, "The Concept of Curriculum Design," Toward Improved Curriculum Theory, eds., V. Herrick, R. Tyler (Chicago: University of Chicago Press, 1950).

Cohen reviewed the characteristics of models from some of the preceding writers. He then extracted those definitional elements which appeared to be appropriate for the level of a curriculum model. The following represents his conclusions of what a model should do:[19]

1. Provide a theoretical scheme.
2. Contain a systematic presentation of ideas.
3. Apply what is known from several known areas to a new area.
4. Create a structure containing a set of symbols and operating rules, to provide operational laws and a pattern of distribution for relative discontinuities.
5. Provide a method of interrelating several propositions.
6. Provide a novel, pictorial representation, suggestive of fresh technique.
7. Include such elements as the teacher, pupils, instructional materials and learning outcomes.
8. Be logically derived.
9. Focus on the problem of selecting, organizing and teaching the learning processes of children and youth.

The model, therefore, is a theoretical scheme, purposely structured, and uniquely presented to direct the development of a program in a subject area as part of a total educational perspective.

The Need for Curricum Theory

Nowhere in education is there greater need for conceptual

---

[19]Cohen, "The Development of an Australian Science Curriculum Model" (unpublished Doctor's dissertation, Michigan State University, 1964). pp. 245 - 46 .

systems to guide theory building, research, and planning than in the field of curriculum.[20] Although programs for curriculum revision and reform have been widespread in most areas, curriculum theory and research continue to play comparatively minor roles in influencing or regulating new curriculum programs. In this case it appears that the lines of force have been reversed.

In order to bring order into the process of curriculum planning and development, a greater infusion of theory, research, and evaluation is essential. Theory can aid in clarifying interrelationships and in suggesting synthesis among the subjects and disciplines which are eminent in curriculum structures.

Goodlad and Richter outlined the functionary purpose of the conceptual system which facilitated the following: (1) the identification of problems and questions presumably having relevance to planning any instructional program; (2) the clarification of the types of inquiry to be productive in dealing with these problems and questions; (3) the relevance of possible connections among these problems and questions; (4) the identification of promising data-sources for dealing with these problems and questions; and (5) the initiation of processes designed to reveal the relevance of these sources and of data extracted from them to the problems and questions classified by the system.[21]

---

[20] J.I. Goodlad and M. N. Richter, Jr., The Development of a Conceptual System for Dealing with Problems of Curriculum and Instruction, Report of an Inquiry Supported by the Cooperative Research Program of the Office of Education, U.S. Department of Health, Education and Welfare (Chicago: University of Chicago, 1967), p. 13.

[21] Ibid., P. 1-2.

Bristow pointed out that many curriculum problems were unresearched or inadequately researched, studied or developed.[22] Hence, operating solutions were made on an empirical basis. What was lacking, asserted Hott and Sonstegard, was a conceptual system or theoretical structure capable of guiding curriculum research design.[23]

Shaw noted such weaknesses in curriculum research as flaws in design, lack of replication and failure to relate studies to larger problems.[24] The most optimistic way of solving this need was to build a coherent theory of curriculum.

Clark, Klein and Raymond reported that most curriculum innovations were designed to cram information into pupils.[25] New programs as a result of the knowledge explosion in several instances have simply meant teaching younger students topics which were traditionally taught in later grades.[26] Goodlad, in a study of 16 curriculum projects in eight subject areas, characterized the movement

---

[22]W.H. Bristow, "Approches to Curriculum Improvement Through Curriculum Development and Research," Review of Educational Research, XXXVI (June, 1966), 349.

[23]L. Hott and M. Sonstegard, "Relating Self-Conception to Curriculum Development," Journal of Educational Research, LVIII (April, 1965), 349-50.

[24]F. Shaw, "The Changing Curriculum," Review of Educational Research, XXXVI (June, 1966), 349-50.

[25]L. Clark, R. Klein and L. Raymond, "Recent Developments Affecting Secondary School Curriculum," School and Society, XCII (December 26, 1964), 402-13.

[26]H. Passow, and Robt. Leeper, eds., Intellectual Development: Another Look (Washington, D.C., A.S.C.D., 1964).

as having focused on single subjects from the top down.[27] He further pointed to the trend toward increased interest in improving curriculum by constructing new courses and producing more effective curriculum materials. He discovered confusion in aims and objectives, lack of state or local direction in curriculum planning, poor evaluation techniques, and experiments that were really not experimental since they compared old ways with new ways rather than suggesting alternative ways and experimenting with them. While the undue emphasis on single subjects gave old courses and school practices a new look, it failed to provide a fresh look at curriculum theory.

Bruner suggested a need for theory of instruction as a guide to curriculum construction.[28] Three important elements of such a theory would be necessary: (1) consideration of the predispositions of children to learn effectively, (2) identification of the structure of the disciplines, and (3) determination of the optimal sequence required for learning. Faix, using scientific theory as a screen through which to examine curriculum theory, concluded that the nature and use of structural-functional analysis as a conceptual tool from the behavioral sciences could help develop laws of curriculum design.[29] Klohr felt the necessity of developing models of curriculum theory to

---

[27] Goodlad, School Curriculum Reform in the United States.

[28] J.S. Bruner, "Needed: A Theory of Instruction," Educational Leadership, XX (May, 1963), 524-525.

[29] T.L. Faix, "Toward a Science of Curriculum: Structural-Functional Analysis as a Conceptual System for Theory and Research," (unpublished Doctor's dissertation, The University of Wisconsin, 1964).

encompass all the necessary elements in order to envisage the central role of the individual and provide for his fullest possible development.[30]

One of the two criticisms that McClure had against curriculum developments was that they demonstrated a "lack of a well-defined theoretical base from which to derive curriculum."[31] The large central goals were absent. Curriculum developers had fallen down on the job of defining specifically and with any kind of creativity what the purposes of the school were. He further claimed that as a result reformers were working within the context of their own disciplines and not considering other forces or other disciplines which impinged on educational decision-making.

Certain problems have stemmed from the trend of making decisions at the practical or instructional end of teaching. Many teachers were making decisions based on the relevancy of the particular situation, with no apparent substantiated basis for making those decisions. Here is where the need for curriculum theory becomes evident. According to Gwynn, this basis - the strategy for goal setting and plan making is curriculum theory.[32]

Taba listed the several decisions that had to be made concerning curriculum. The very complexity and multitude of decisions and the

---

[30] P.R. Klohr, "Problems in Curriculum Theory Development," Theory in Practice VI (1967), 208.

[31] R. McClure, "Trends in Curriculum Development," Journal of Health, Physical Education and Recreation (November - December, 1967), 25.

[32] J. Gwynn and J.B. Chase, Jr., Curriculum Principles and Social Trends (New York: Macmillan Co., 1969), p. 586.

fact that they are arrived at by different segments of the educational organization, made it all the more important that there be adequate theoretical development. This effort would present a clear cut methodology of thinking and planning. Taba postulated that one of the chief problems in educational organization was confusion - confusion over philosophical and psychological theories, as well as the functions of the school. She felt that through continuous experimentation with curriculum theory that many of these problems would be alleviated.[33]

Tyler attempted to explain how some of the forementioned problems might be mitigated by the use of conceptual theory:[34]

1. To identify critical issues in curriculum development and underlying generalizations.
2. To point up the relationships which exist between these critical points and their supporting structure.
3. To suggest the approaches that need to be made to resolve these critical issues.

Both Downey and Johnson stipulated unique purposes of curriculum theory which in themselves would bring inherent value to such research.

Downey believed in the taxonomic powers of conceptual theorizing. Curriculum theory or models are useful "primarily for their systematizing powers or their capacity to order phenomena." Various taxonomic systems are frequently examples of conceptual systems. "An effective

---

[33] H. Taba, Curriculum Development: Theory and Practice (New York: Harcourt, Brace and World, Inc., 1962), p. 8.

[34] R. W. Tyler, Basic Principles of Curriculum Development (Chicago: University of Chicago Press, 1950), p. 1.

conceptual model not only orders the elements in the system under analysis but also assumes certain relationships among these elements."[35]

Johnson saw research in curriculum theory as being intrinsic in nature. The value of research in this area allows for an understanding of curricular phenomena:[36]

> The theoretical clarification they bring about may ultimately benefit both scholars and practitioners in their efforts to improve curriculum, but this possibility is not the immediate motive for attempting to construct a curriculum theory.

Johnson is convinced that it is of substantial importance to gain an increased insight into the nature of curriculum theory; too much time has been spent on improving the process of curriculum development.

The Need for Curriculum Research in Physical Education

No curriculum model has been developed to date for physical education in Canada. Most "curriculum reform" projects have been concerned with instruction more than with curriculum. These projects rarely make their curriculum explicit. They concentrate heavily in instructional planning and include lists of learning materials to be provided, suggested activities, evaluation procedures and other instructional advice. In a way these reformers have attempted to make curriculum "teacher-proof", which supposedly limits the teacher's decision making capacity in the instructional setting. An analysis of curriculum guides in physical education in Canada demonstrates the validity of these statements. Program outlines of learning activities

---

[35] Downey, op. cit., p. 65.

[36] Johnson, op. cit., p. 127.

have been formulated but little reference has been made to the justification of these activities.

In the United States, Alley summarized curriculum-related research in physical education prior to the late 1950's.[37] The earliest extensive study was carried out by a national committee of AAHPER (American Association for Health, Physical Education and Recreation) in 1929. The objective was "to formulate a comprehensive curriculum of physical education activities, so graded as to eliminate unnecessary duplication from year to year and so balanced as to be adaptable to any ordinary community situation."[38]

Many of the curriculum studies indexed as having appeared in the Research Quarterly, 1930-1960 appeared throughout the years 1930-1937. Several more recent studies,[39,40,41] lead one to conclude that there is no conceptual framework; there is little consistency in content (except that sports skills and activities predominate), and that there

---

[37] L.E. Alley, "Research and the Curriculum in Physical Education," Research Methods in Health, Physical Education and Recreation (Washington, D.C.: AAHPER, 1959), pp. 398-422.

[38] W.R. LaPorte, "Eighth Annual Report of the Committee on Curriculum Research," Research Quarterly, VII (1936), 99.

[39] C.M. Baker, "Survey of the Administration of Physical Education in Public Schools in the United States," Research Quarterly, XXXIII (1962), 632.

[40] H. Cordts and J. Shaw, "Status of the Physical Education Required or Instructional Program in Four Year Colleges and Universities," Research Quarterly, XXXI (1960), 409.

[41] R.Koss, "Guidelines For the Improvement of Physical Education in Selected Public Elementary Schools in New Jersey," Research Quarterly, XXXVI (1965), 282.

is a wide disparity in the quality of existing programs. This disparity in the programs, together with a predominance of unrelated activities, may be the direct result of a lack of a theoretical foundation for physical education curriculum.

In 1963, the Physical Education Division of AAHPER took the first step toward bringing all of the forces of current educational understanding to bear on the basic questions concerning curriculum in physical education. A Curriculum Commission was established and funds were provided to aid this Commission to meet and discuss this problem. As of 1967, the Curriculum Commission had reached agreement on the following points:[42]

(1) The functional curriculum of physical education now operative in the schools of the United States is a hodge-podge of concepts, experiences, and activities which has no consistent pattern of objectives, content, or education interpretation.

(2) In many schools, the children and young adults who are subjected to these experiences are not deriving from them the kinds of learning and personal development which might accrue to their participation in this respect of the educational program.

(3) There is need for a comprehensive conceptual framework

---

[42]A.Aldrich, Cooperative Development of Design for Long-Term Research Project Directed Toward the Identification and Evaluation of a Conceptual Framework for the Curriculum in Physical Education, Grades K-16, Report of an Inquiry Supported by the U.S. Department of Health, Education and Welfare (Washington, D.C. : AAHPER, 1967), p. 1.

which will include and support the specific experiences of physical education in educationally meaningful terms.

It is reasonable to assume that the points described by the Curriculum Commission and directed towards the United States are also applicable to the position of physical education in Canada.

CHAPTER III

PROCEDURES

The Understanding of Curriculum

In order to develop a total curriculum, a format or plan for operation is needed. Because of the complexity of education as a system, order and structure are fundamental variables.

In order to best illustrate the theoretical perspective of curriculum, a model is utilized to depict the relationships of the intervening variables and to interrelate and integrate the multitude of elements which make the framework complete.

According to Lawrence, every curriculum theory has underlying it a notion of values.[43] Since a curriculum cannot contain all the learnings, choices have to be made concerning what to include, what to exclude, and what to emphasize. Choices were made by valuing some things more highly than others.

According to the following set of criteria, Johnson's model for curriculum theory was selected to serve as a basis for developing the curriculum model for physical education.[44] Johnson's theoretical framework was systematic, representational, explicative and verificatory. This evidence satisfied both Griffiths'[45] and

---

[43] G.D. Lawrence, "Bruner: Instructional Theory or Curriculum Theory," Theory in Practice, VIII (February, 1969), 20.

[44] Johnson, op. cit., p. 133.

[45] Griffiths, op. cit., p. 346.

Meadows'[46] definition of models. Johnson's work also presented a clear cut methodology of thinking and planning in the development of curriculum theory -- a requirement stated by Taba.[47]

Johnson identified three components of curriculum theory: (1) the curriculum development system, (2) curriculum, and (3) the instructional system.

Curriculum was defined as a structured series of intended learning outcomes. How were these intended learning outcomes formulated? The list of intended outcomes was derived from the curriculum development system, which included various elements thought to be of importance in building curriculum. These elements selected will be discussed in a later section.

Once the learning outcomes had been formulated, they served as a prescription for the desired ends of the instructional system or program. Curriculum does not prescribe the means, i.e. the activities, materials, or the instructional content which makes up the various programs, but has reference to what it is intended that the students learn.[48,49,50] A wide variety of teaching methods and materials may be used to obtain the same desired intended learning outcomes. If the actual learning outcomes of the instructional program are evaluated and

---

[46] Meadows, op. cit., p. 8.

[47] Taba, op. cit., p. 8.

[48] Johnson, op.cit.,p. 130.

[49] Goodlad, The Development of a Conceptual System.

[50] Taba, op. cit., p. 268.

found to be consistent with the intended learning outcomes postulated by curriculum, then proper learning has been achieved. Continuous evaluation of the program and the curriculum is then necessary to meet the demands of a changing society.

The Elements of the Curriculum Development System

In order to develop a design for the physical education curriculum, it was necessary to identify the basic elements of curriculum. Tyler pointed out that:

> It is important as a part of comprehensive theory of organization to indicate what kind of elements will serve satisfactorily as organizing elements. And in a given curriculum it is important to identify the particular elements that shall be used 51

Taba took a similar approach:

> A theory of curriculum is a way of organizing thinking about matters that are important to curriculum development: what the curriculum consists of, what its important elements are, how these are chosen and organized 52

As well as identifying and describing the elements, it was necessary to state how or why the specific elements were chosen. It was the intention of the author to justify the choice to avoid bias and ambiguity. The remainder of this chapter deals with the identification of the elements of the curriculum development system.

The first element chosen was philosophy. The development and nature of philosophical thought and reason in education should be left to the philosopher; it is not within the scope of this paper. However, the author stated a philosophical position towards education in general

---

[51] Tyler, Basic Principles, p. 64.

[52] Taba, op. cit., p. 420.

and physical education in particular. According to Gwynn, one's philosophy of life, and particularly one's philosophy of education, constitute the basis for any decisions made within the curriculum. One's concept of what is real, true, good or valuable will play an important role from the initial to the final steps in curriculum-making.[53]

A second element chosen was the general aim and objectives of physical education. The inclusion of the aim and objectives in the design was obvious, for it is the chief function of objectives "to guide the making of curriculum decisions on what to cover, what to emphasize, what content to select, and which learning experiences to stress."[54]

A third element taken into consideration was the structure of knowledge and the nature of learning. Lawrence postulated that "every curriculum theory has underlying it a viewpoint regarding the nature of knowledge and about how learning occurs and how it can be aided by a teacher."[55] It was important to include in the design a review of some of the most efficient means to facilitate both learning and the acquisition of knowledge.

Three categories of learning outcomes have generally been agreed upon: (1) the cognitive, (2) the affective, and (3) the psychomotor domain. An important consideration that had to be realized was the fact that learning in physical education focused more on the psychomotor or "action" domain than on the cognitive or effective.

---

[53] Gwynn, op. cit., p. 581.

[54] Taba, op. cit., p. 197.

[55] Lawrence, op. cit., p. 20.

A fourth element selected was the nature of the subject field and is commonly referred to as the source of the curriculum. The nature of the subject field refers to the knowledge (concepts, principles, skills, facts, values, etc.) within the subject that has potential interpretive value or importance to the learner. According to Johnson, the specific curriculum items which are selected depend on how fundamental and crucial they are to the subject field, how well they explicate its structure, and how powerful they are in furthering its characteristic thought processes and modes of inquiry.[56]

A fifth element chosen was criteria for selection of content. Selection was essential because it is impractical to attempt to include all things available and teachable from the total available culture. The matter of concern in this case then was to make explicit the criteria for selection of curriculum content.

The last element was scope and sequence. Scope refers to the breadth of the curriculum and answers the question of what to teach. Sequence is based upon several criteria to consider, among them: the developmental stages of human growth, the maturing needs and interests of the learner, and research findings on the optimum time to introduce certain types of learning experiences in terms of pupil readiness.[57]

The Operational Model

The three components of curriculum theory have been identified: (1) the curriculum development system, (2) curriculum, and (3) the

---

[56] Johnson, op. cit., p. 133.

[57] L. Hanna, "Meeting the Challenge," What are the Sources of the Curriculum? A Symposium (Washington, D.C.: Association for Supervision and Curriculum Development, 1962), p. 52.

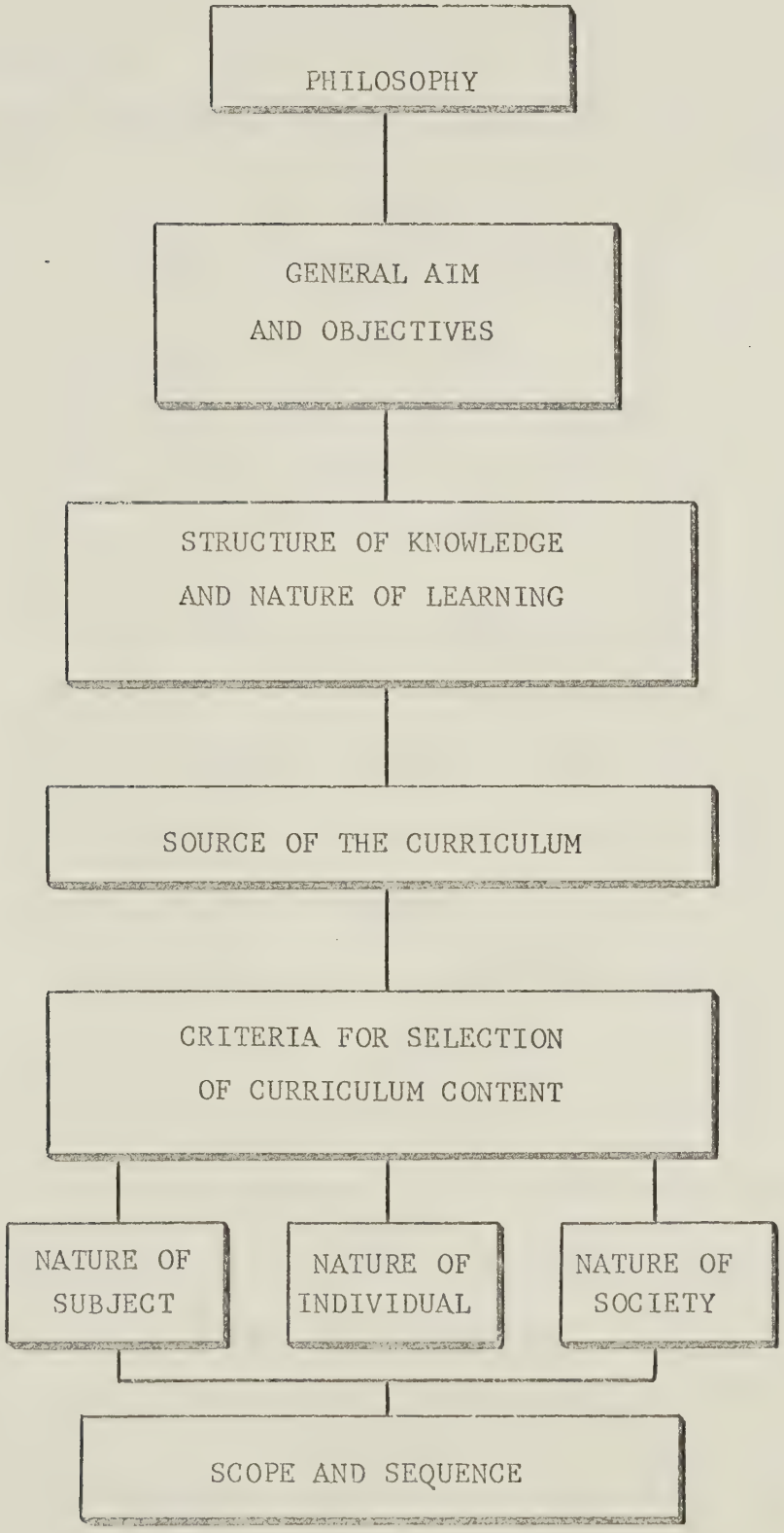
instructional system. Also, the elements of the curriculum development system have been named. The next procedure was to sequence the elements and give them order. It is the function of models to demonstrate clear, sequential representations of curriculum theory. Figure 1 depicts the elements of the curriculum development system; the vertical arrangement shows the necessary hierarchial sequence among the elements.

In order to make the theoretical framework complete, the operational model had to depict the relationships of the intervening variables or components and to inter-relate and integrate the elements into the total curriculum picture. This model shows where evaluation was likely to take place -- evaluation being necessary to maintain the equilibrium of the specific curriculum and to make sure that the actual learning outcomes derived from the instructional programs were the desired learnings prescribed by its input, the structured series of intended learning outcomes. (See Figure 2).

The instructional system or program includes three operations: (1) planning, (2) executing (instructing) and (3) evaluating. It was not within the scope of this thesis to give a detailed plan and methodology for an instructional system. Therefore, practical evaluation of a program was not utilized. However, it was necessary to show in the model how evaluations take place and what operation is evaluated. There are two distinct evaluations that can be made. One is an evaluation of instruction; the other is an evaluation of curriculum. Curriculum serves as the criterion for instructional evaluation. It is more difficult to evaluate curriculum. Johnson pointed out that if curriculum is to be evaluated empirically on the basis of instructional outputs, then differences in instructional effectiveness must be

FIGURE I

ELEMENTS OF THE CURRICULUM DEVELOPMENT SYSTEM



controlled, randomized, or partialled out.[58] It was decided that if curriculum was to be evaluated, it would be necessary to return to the elements of the curriculum development system and re-analyze each one of them.

Theory into Practice

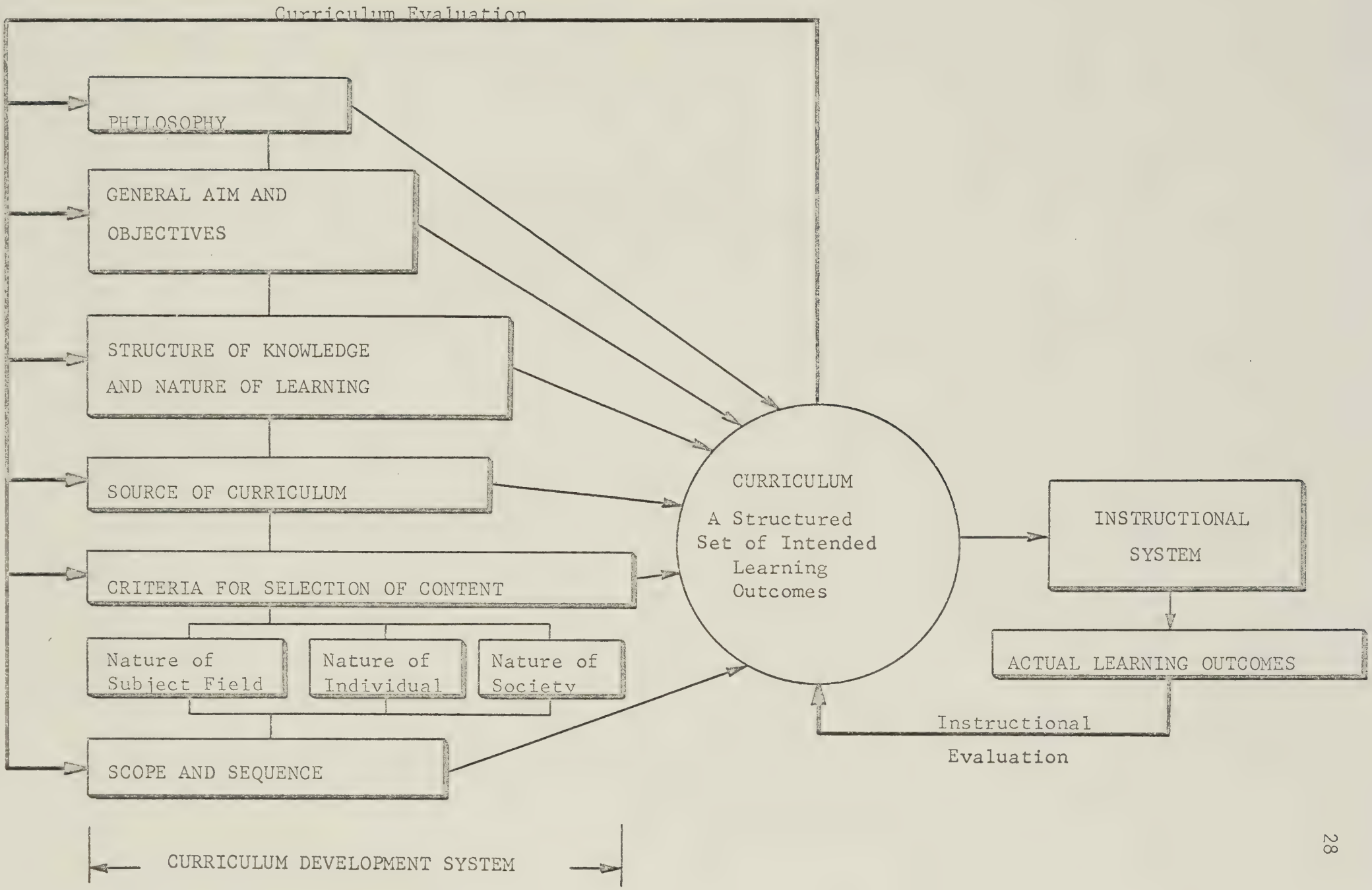
In many instances in the development of curriculum theory, there has been a failure to move from theory into practice. There is no real purpose to allow one's interest to end at the theoretical level. A final test had to be made in order to see if the model was internally consistent and not merely a collation of ideas and opinions. It was necessary to demonstrate how this theory could be implemented in the realm of the practical.

The Operational Model for the Development of a Physical Education Curriculum (Figure 2) outlined the various elements of the development system and through analysis and synthesis allowed one to arrive at a logical process for deriving a structured series of intended learning outcomes for physical education. It was the intention to show how the model could be used as a guide to outline a specific physical education curriculum. A hypothetical school situation was described and the model was then used as a criterion to outline the process of curriculum development. If the model were found suitable for prescribing the curriculum, then it would be assumed to have practical value and be declared operational.

---

[58] Johnson, op. cit., p. 135.

FIGURE 2. AN OPERATIONAL MODEL FOR DEVELOPING A PHYSICAL EDUCATION CURRICULUM



CHAPTER IV

A. ELEMENTS OF THE CURRICULUM DEVELOPMENT SYSTEM

Introduction

In outlining a curriculum theory the complex, related and interacting phenomena must be identified and described. In this case, the elements of the curriculum development system have been identified. The purpose of this chapter then, is to discuss each element as a component of the total model and to show how it interacts with other elements. It is also necessary to demonstrate the value of each element in influencing the physical education curriculum.

1. Philosophy

The first element of the curriculum-development system is philosophy. This includes one's philosophy of education as well as a philosophy of physical education. Gwynn referred to a conflict in philosophical ideas, teaching theories and practices as being one of the three major areas of conflict existing in curriculum theory.[59] Willgoose stated that it was the responsibility of every teacher-to-be and teacher-in-fact to think deeply about the ultimate purposes and existing practices in education, "...philosophizing is the earmark of the professional person."[60]

---

[59] Gwynn, op. cit., p. 36.

[60] C. E. Willgoose, The Curriculum in Physical Education (Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1969), p. 54.

All the schools should have a basic philosophy of education understood by all staff members of the particular school. In this way the general aims and objectives of the school may be agreed upon and consequently achieved to some extent. The next step would be for departments to meet and decide upon the general purposes which fall within the context of the overall purposes of the school. Thus, a philosophy of physical education for each school is the starting point for curriculum development in physical education and for the purposes of this thesis it is the first element of the curriculum-development system.

In physical education, from the supervisor of the Department to the instructor in the gymnasium, the process of rationalizing, of thinking and struggling with diverse viewpoints, in germane to the program. To rely solely on others to think out and prepare lists of desired pupil competencies and curriculum content is to miss experiencing some of the richly challenging activities that endear the profession to the teacher. Teachers need to establish and to strive for their own goals.

Therefore, the second step after formulation of a general physical education philosophy is for each teacher to develop his own philosophy of physical education which should serve to guide him both in formulating his own specific instructional objectives and achieving these objectives through consistent teaching procedures. Bookwalter assumed the importance of a philosophy to serve as a guide to further action. He acknowledged a need for a concrete elaboration of ideas having direct application to the teaching of physical education skills. In order to solve this problem a systematic philosophy of physical education would have to be compiled which would be set forth in the way of answers to specific issues which physical educators must face.

Questions would concern beliefs about standardization of instruction, administrative control, teacher control, subject matter, testing, the education process, and one's philosophy of life.[61]

As an educator, one may choose to be an idealist, a realist or a pragmatist, for example, or one may prefer to become an eclectic and take fragments of each of these philosophies. The latter choice is common practice. According to Van Dalen, the prudence of this course of action depends on how well one structures or thinks through the totality of his beliefs. A smorgasbord of concepts selected at whim from various schools of thought may cause a teacher to do contradictory things in the classroom and gymnasium. Consistency is relevant.[62]

There are several philosophic positions which Oberteuffer mentioned which outline a general philosophy concerning activity and physical education.[63]

1. Due to the increasing inevitability of man becoming sedentary, and realizing that man's function is dependent upon mobility, the important role that activity must play in the life of man is indicated.
2. A philosophy which recognizes the importance of activity will provide time to participate in such.

---

[61] K. W. Bookwalter and H.J. Vander Zwagg, Foundations and Principles of Physical Education (Philadelphia: W.B. Saunders Co., 1969), p. 22.

[62] D.B.Van Dalen, "Interpretive Summary of Three Philosophies," Philosophies Fashion Physical Education (Dubuquq, Iowa: Wm.C.Brown Co., Inc., 1963), p. 39 .

[63] D. Oberteuffer, Physical Education (New York: Harper and Row, 1962), pp. 71-74.

3. If man is to take part in physical activity, it is evident that a social climate must prevail which is amenable to such a viewpoint.
4. No such dichotomy between mind and body is now recognized. Education is concerned with the total development of the individual, and his physical well-being influences his ability to reason abstractly so that it is basic to all education.
5. In an effort to show the relationships between the purposes of general education and those of physical education, physical education uses the body in action as a reflection to the total self. Through movement involving self-initiated activity, physical education attempts to add to the knowledge of the human race and to assist the individual in a self-discovery which will relate him to his world and his life purpose.
6. In order to achieve the above principle, physical education must draw from all of the disciplines and in turn assist these disciplines in their concern for the total well-being.

A general understanding, philosophic in nature, of activity and physical education has been formulated. It is desirable now to outline a more precise philosophy which should give direction to philosophical ideas, teaching theories and practices and at the same time help to achieve consistency in matters relating to curriculum development.

A pragmatic philosophy of physical education was selected as

opposed to essentialism or traditionalism. Pragmatism or experimentalism as it is sometimes called, is a component of progressivism which was expounded by John Dewey.[64]

The pragmatist's objective of education is to have students solve successfully the problems of life as they arise. He strives to stimulate a desire for continuous growth and helps students become functional members of society by providing opportunities for ever-changing experiences.[65] This is sometimes referred to as social efficiency.

The student is thought of as an active, doing organism who grows through effective interaction with the ever-changing, social, physical environment.

The nature of the curriculum is concerned with utilizing any activity that gives students experience in applying scientific methods of problem solving. Curriculum is not a systematic structure consisting of rigid work units. It consists of related or disparate units of work and the content is comprised of anything that helps students to solve the problems at hand. Emphasis is placed on co-operation, "doing", "problem solving". Hence sports and games provide an excellent medium for instruction.

The teacher is a guide, a co-worker and co-learner. He emphasizes "how" to think and do rather than "what". The learning environment extends beyond the walls of the classroom. Less emphasis

---

[64]Gwynn, op. cit., p. 37.

[65]Van Dalen, op. cit., p. 36.

is placed on systematic lectures, terminal tests, and traditional coverage and organization of subject matter. Opportunity is given for the free interchange of ideas.

In regard to a pragmatic view of physical education Burke stated, "Physical education activities provide an almost ideal sort of experience under pragmatic criteria." He went on to say that participation in sports and games create microcosms of real life. They especially meet pragmatic criteria for "life-like educational situations, providing intensely meaningful emotional involvement, requirements of social and democratic interaction, competition with natural restrictions and imposed adversities, and responses to the challenges of the socio-physical environment."[66]

The physical education program would include among other things: (1) a variety of diverse activities,(2) socializing activities, (3) activities requiring individual adaptability, choice, self-evaluating consequence, self expression and creativity, and (4) activities which are broadly integrative with the total subject matter of the school and of life.

In regard to the learning environment of physical education Burke stated several pre-requisite assumptions:

1. Educational activity originates in a recognized problem of the learner or of the social group of which he is a member.
2. Educational activity should require creativity, choice,

---

[66]R. K. Burke, "Physical Education and the Philosophy of Pragmatism," Philosophies Fashion Physical Education (Dubuque, Iowa: Wm. C. Brown Co., 1963), p. 47.

decisions, and initiation on the part of the participants.

3. Pupils should participate in the determination of subject matter, activity, and method.
4. Pupils should evaluate their own individual and group performance, and should participate in the reorientation of the educational activity, to the greatest extent of their capabilities.
5. Educational activity should be a democratic and social process.[67]

The pragmatist abhors the "response to command" method of teaching because it produces regimentation when he wants self-discipline, obedience when he wants initiative, and conformity when he wants creativity. Broad educational effectiveness should be kept in mind. Concerning discipline, methods designed for purposes of class control and used in a restrictive sense are not employed. Discipline is approached positively and is accomplished through an appeal to spontaneous and intrinsic motivation aimed at creating self-discipline, self control, cooperation and self-responsibility.

Although it is worse not to dilute a philosophy by compromising with several other philosophies, true pragmatists would evaluate traditional theories and apply the universal criterion by asking, "Does it work?" It would be a mistake for educators to adhere rigidly to one particular philosophy by applying its principles to extremes. One's own philosophy should leave open implications for redirection of

---

[67] Ibid., p. 51.

behavior and thus allow for periodic self-evaluations of personal philosophies.

2. General Aim and Objectives

The second basic element chosen by the author is the general aim and objectives of physical education.

Little effort has been made to determine the ultimate aims of schooling and the respective contribution each discipline can make to these aims. Instead the objectives of education have become a composite of the objectives set for each subject.[68] The problem with this procedure is that the goals of today's schools do not extend beyond those subjects that have managed to establish themselves in the curriculum.

In spite of this criticism of educational objectives there is a wide acceptance of the Seven Cardinal Principles of Secondary Education.

Health

Command of the fundamental processes (the three R's, etc.)

Worthy home membership

Vocational competence

Effective citizenship

Worthy use of leisure

Ethical character

The statements of the general objectives for public education are a guide and a source for the remote and most general objectives

---

[68] J.I. Goodlad, The Changing School Curriculum (New York: The Fund for the Advancement of Education, 1966), p. 92.

of physical education. It should be evident that this subject or course of study cannot contribute essentially to all the objectives of education. If this were the case, there would be no more need for many subjects. Practically all subjects have some unique contribution indispensably related to the educational process. Physical fitness and the development of movement skills would be characteristics unique to physical education. On the other hand, there are "shared" objectives when one or more other subjects make significant contributions to the achievement of these purposes. For example, most physical educators believe that their field makes important contributions to social behavior, such as sportmanship and cooperation. Similarly, other subject teachers may feel that they contribute to the achievement of these social behavioral characteristics as well.

In order to understand and describe the overall term "purposes" of physical education, it is necessary to look at two distinct aspects of the concept. The first area is the all encompassing "aim". The second area concerns analysis and discussion of "objectives" which in turn can be subdivided into general and specific objectives. This thesis acknowledges Nixon and Jewett for this analysis of definitions.[69]

Aim. The "aim" is the ultimate, ideal conceptualization of the end result to be attained. It is so idealistic, so distant and so broadly constructed that it probably never will be fully attained by any one pupil in a school program. However, it gives an over-all direction to

---

[69] J.E. Nixon and A.E. Jewett, An Introduction to Physical Education (Philadelphia: W.B. Saunders Co., 1969), pp. 65-67.

the educational effort.

Bookwalter described an appropriate aim for physical education:

> to aid in the optimum development, integration and adjustment of the individual, physically, mentally, and socially, through guided instruction and participation in total-body sports, rythmic gymnastic activities selected and conducted according to social and hygenic standards....70

General Objectives. General objectives are the major subdivisions of the aim. They too are broad, extensive and idealistic, but they serve to separate and clarify the essential elements of the total aim. They keep the field in harmony with educational philosophy and have directional value but lack specificity necessary to adequately help the physical educator. General objectives are believed to be stable in nature and thus tend to be long term. It is desirable that the various provinces and school boards agree on the general purposes and objectives of all subjects as well as physical education.

There are usually four general areas of development common to physical education and these are expressed in the general objectives. They are as follows: (1) Organic development, (2)Neuromuscular development, (3) Interpretive development (knowledge, understanding, appreciation), and (4) Impulsive development (social development).

The following statement of physical education general objectives was contributed by Nixon and Jewett:[71]

1. To develop a basic understanding and appreciation of human movement involving (a) the deeper, more

---

[70]Bookwalter, op. cit., p. 205

[71]Nixon, op. cit., p. 90.

significant human meanings and values acquired through idea-directed movement experience; (b) and essential non-verbal mode of human expression; (c) the development of a positive self-concept and body image through appropriate movement experience; (d) the development of key concepts through volitional movements and closely related non-verbal learning activities.

2. To develop and maintain optimal individual muscular strength, muscular endurance, and cardiovascular endurance. This "physical fitness" objective includes flexibility, balance, agility, power, speed. It is essential to develop not only skill, but also knowledge and understanding relevant to physical fitness.
3. To develop individual movement potentialities to the optimal level for each individual. Physical education instruction concentrates on the development of selected neuromuscular movement patterns basic to specific skills.
4. To develop skills, knowledges and attitudes essential to satisfying, enjoyable physical recreation experiences engaged in voluntarily throughout one's lifetime. Normal, mental and emotional health are enhanced by participation in voluntary physical recreation.
5. To develop socially acceptable and personally rewarding behaviors through participation in movement activities. Physical education seeks to develop desirable social habits, attitudes, and personal characteristics essential to citizens in a free, democratic society.

Other Types of Objectives

It is appropriate at this time to define other types of objectives related to education, but they are not a division or part of the second element, the general aim and objectives. The reason for this course of action is to help distinguish the different kinds of objectives from each other. Three types will be defined, (1) specific objectives or program objectives, (2) goals or student objectives, and (3) outcomes.

Specific Objectives. (Program objectives). Specific objectives constitute the next level of analysis following general objectives. Willgoose outlined specifically the following purposes of these objectives:

1. The objectives are statements of educational intent expressed so specifically as to establish criteria for selecting and organizing what is to be taught. In this respect, a good educational objective defines both the behavior desired in the learner and areas of human experience through which the behavior is to be developed.
2. Specific objectives encourage teachers to move from the more general to the particular activities which foster skills and understanding.
3. Specific objectives, when reduced to immediate goals, focus on three types of human behavior: cognitive, psychomotor, and affective. This taxonomy provides a useful tool both for determining what must go into the

curriculum and for evaluating the results of teaching.[72]

The specific objectives of any school physical education program should be selected by physical staff members and the administration. Sometimes educators advocate the use of pupil representatives, parents, and community representatives. It is important that qualified physical education specialists be well represented on all selection committees.

The physical education objectives grow out of the needs of the individuals served by the program and the society of which they are a part. Once the needs are determined and the objectives are formulated, activities are then selected which are most likely to help bring about the objectives sought. All that remains is to organize a program the aim of which is to satisfy the needs and attain these objectives. Although the preceding is a rather simplified process, it demonstrates the origin and function of specific objectives.

Theoretically each general objective can be analyzed to reveal its essential components. Then the question should be asked, "What must the student accomplish, master, perform, know, understand, value and appreciate, in order to progress in the direction of the general objective and hence toward the aim? This analysis, if conducted vigorously and thoroughly, will yield a large number of specific objectives for each general objective. Specific objectives should be stated at a level of preciseness which permits actual accomplishment by the student.

One of the criteria for objectives set forth by Mager was that

---

[72]Willgoose, op. cit., p. 55.

a usefully stated objective should be stated in behavioral or performance terms that describe what the learner will be doing when demonstrating his achievement of the objective.[73] This allows for observance and evaluation of the student in terms of expectations inherent in these objectives. The process of stating objectives behaviorally requires careful, systematic planning, teaching and evaluating. The teacher who engages in such an explicit thought process should certainly benefit from the improvement in the quality of educational experiences he can provide to students.

It is important to keep in mind that not all objectives can be or should be stated behaviorally. Not all educational objectives are capable of measurement. The most difficult educational outcomes to be measured are attitude changes.

It is not the purpose of this thesis to develop extended lists of specific objectives applicable to physical education. Without a selected group of students who attend a certain institution within a given community, their needs cannot be analyzed nor can the nature of their society. An attempt will be made later to describe the criteria for selection of content, which include, a discussion of the needs of students and the nature of society.

Goals (student objectives). Goals, like behavioral objectives, represent terminal performances, or descriptions of stable behaviors, which are desired results of a planned set of educational experiences.

---

[73] R.F. Mager, Preparing Objectives for Programmed Instruction (San Francisco: Fearon Publishers, 1962), p. 24.

It is extremely necessary for student as well as teachers to have certain goals in mind as they participate in physical education. These goals may differ considerably among individual students and may be different indeed from the goals of the teacher. The teacher must be fully aware of the goals held by members of his class if he is to provide optional learning opportunities on an individual basis. One way to implement this policy is to have students think about goals that they might aim for in the program and allow them to express verbally, or in writing their desired goals.

In order to work properly, there must be communication established between the student and teacher to exchange general opinions and reactions to each other's goals and objectives. Many teachers fail to tell their classes at the beginning of each school year what objectives they have in mind for the coming season. As a result many students feel that the objective of physical education is to allow for a "free play" period or recess to give them a break from other academic work with no learning involved.

A probable list of goals for physical education stated by students might include: to have fun, to be with the group, to learn more about games and to increase skill levels, to become stronger, increase endurance, to develop better physique, to take a break from other studies or to be more active physically.

Kenyon developed a multidimensional conceptual model for characterizing physical activity from the standpoint of its instrumental value for individuals. The following components are listed as being contributions of physical activity and may be held as

student goals:[74]

1. Social experience (meeting new people and perpetuating existing relationships).
2. Health and fitness.
3. Pursuit of vertigo (those physical experiences providing, at some risk to the participant, an element of thrill through the medium of speed, acceleration, sudden change of direction, or exposure to dangerous situations, with participant usually remaining in control).
4. Aesthetic experience (satisfaction of a sense of beauty in motion).
5. Catharsis (release of frustration and tension through physical exertion, a socially accepted outlet for the instinctive aggressive drive, and possibly release through substitute aggression in spectatorship.
6. Ascetic experience (enduring long and strenuous training in order to experience eventual high achievment, superiority, or glory).

Outcomes. "Outcomes" refer to a description of actual overt, describable behaviors exhibited by a student after a period of instruction has occurred. If evidence can be accumulated to show that a pupil has attained a rather stable behavioral change or adaptation due to the effects of practice,he has learned and has evolved a new set of

---

[74]G.S. Kenyon, "A Conceptual Model for Characterizing Physical Activity," Research Quarterly, XXXIX, No. 1, (1968), 98 - 101.

behaviors called outcomes. Outcomes may be compared to the specific objectives or goals set before the instructional unit began and the extent of achievment of these objectives can then be assessed. These types of outcomes may be referred to as intended learning outcomes.

Later in this thesis a rationale for selecting learning outcomes will be explained, following a discussion on the remaining elements of the curriculum-development system. The importance of evaluation will also be discussed in reference to intended learning outcomes and actual learning outcomes.

3. The Structure of Knowledge and the Nature of Learning

The structure of knowledge and the nature of learning comprise the third element of the curriculum development system. Both the structure of knowledge and the nature of learning are interdependent variables; consequently they are considered as one element. The following relationship can be seen between them: knowledge is the substance to be learned; learning occurs most efficiently, if it takes place in an orderly fashion; therefore, learning is benefited if the knowledge to be learned is structured. Knowledge that is unorganized, unrelated or of a low order inhibits learning.[75]

Both the structure of knowledge and the nature of learning will be discussed separately.

The Structure of Knowledge. One of the most profound innovators in the structure of knowledge was a psychologist, Jerome Bruner. In his book, The Process of Education, Bruner outlined a theory of the nature of

---

[75] J. Bruner, The Process of Education (Cambridge:Harvard University Press, 1960).

the learning process.[76] He stressed the teaching and learning of structure rather than mastering facts and other techniques, evident in the "subject approach" to learning. Each subject area or discipline is composed of basic underlying principles which, when brought forth and understood, form the foundation or structure of the subject field.

This structure of knowledge may be the facts, concepts, principles, norms and rules that give the broadest and most comprehensive interpretation of the subject.[77] Among these basic elements of knowledge is a hierarchical relationship such that some concepts and principles can be derived from the more powerful ones.

A "field of knowledge" is referred to as any general area included in the school program, in which the material is logically organized. Therefore, the structure of knowledge may take many different forms depending upon the nature of the content of the given field of knowledge. It is essential that a sequential ordering of knowledge takes place revealing the logical relationships discovered among the general ideas.

Inquiry is the process of producing knowledge.[78] Different kinds of knowledge are evident, as previously mentioned; for example, facts may be thought of as low order knowledge. This is because facts may be memorized, conditioned or indoctrinated. Their use can be very minimal, perhaps for recall only, but usually they become meaningless bits of information which most frequently become forgotten.[79] Real knowledge

---

[76] Ibid.

[77] H.S. Broudy et al., Democracy and Excellence in American Secondary Education (Chicago: Rand McNally and Co., 1964), p. 82.

[78] Downey, op. cit., p. 73.

[79] Ibid.

however, gains power as it is reconstituted, reformulated and used to test a never-ending variety of hypotheses. Learning produces real knowledge only when the substance of the learning is internalized by the learner.

The structure of knowledge and mode of enquiry of each subject are basic in developing learning activities. If the structure of a subject field is understood, then learning and progress to advanced levels are facilitated. The structure can be identified and translated into learning experiences for instruction. This method is referred to by Bent as the "structural approach" to curriculum development.[80] It emphasizes understanding, the development of perceptual skills and symbolic operations which lead to an extension of learning and knowledge.[81] More will be said about the "structural approach" later in a discussion on content.

Bruner made four claims that can be made in reference to the importance of structure in the learning process:[82] (1) understanding the fundamental principles makes a subject more comprehensible; (2) in regard to the human memory, unless details are placed in a structured pattern, they are rapidly forgotten; (3) understanding the fundamentals and ideas of a subject is the main road that leads to transfer of training; and (4) constant re-examining of material taught in the elementary and secondary schools for its fundamental character results

---

[80] R.K. Bent, Secondary School Curriculum (Boston: D.C. Heath and Co., 1969), p. 4.

[81] J.S. Bruner, "Education as Social Invention," Saturday Review (February, 1966) 70-72.

[82] Bruner, The Process of Education, p. 23-26.

in the gap between advanced knowledge and elementary knowledge being narrowed.

The Nature of Learning. Learning is a process by which an individual invests cultural content with meaning, thereby becoming capable of acting differently toward the item, or another item of cultural content. Learning does not necessarily change behavior, but it changes the potential for behavior. Learning can be detected by contriving a situation in which a change in behavior can be manifested.[83]

The individual's personal organization of knowledge can be similar to the logical structure of knowledge within each field of learning. With proper instruction the individual builds guiding ideas. These ideas function in his thought as schemata, which bring together in one comprehensive view many otherwise disparate and completely unrelated elements in the experience of the learner. They give the learner a sense of direction and organization which aids in the process of learning. As Broudy emphasizes, this is why it makes a difference what materials we choose to teach, for those materials must exemplify the major ways in which experience can be ordered.[84]

Learning Theories. Various learning theories have been postulated as interpretations of the learning process. This thesis will deal with general descriptions of three theories and will show how physical education uses them.

The first learning theory is conditioning. Conditioning is perhaps the simplest type of learning. It involves setting a patterned

---

[83] Johnson, op. cit., p. 137

[84] Broudy, op. cit., p. 117.

reflex to the same repeated stimuli. In physical education, conditioning is important in teaching students to react to whistles, to move on a command or react to a bell. Students are conditioned to swing a bat on a strike pitch or to sprint start from the sound of a starting gun.

The second learning theory is connectionism or the S-R Bond Learning theory. It is based on the assumption that once a neural pathway has been established between stimulus and response, it is strengthened by subsequent stimuli of the same nature which usually brings an identical response.[85] Connectionism is important to physical education through teaching the concept of trial and error. The teacher must attempt to get the student to practise a certain skill and therefore teach himself. Two things are involved here: first, to impress upon the student that it is necessary to practise to improve performance and second, if the proper movements are initiated during the practice, success probably will be achieved. Shooting a basket-ball into a net requires practise. Motivation ensues if the ball goes through the hoop, which subsequently stimulates the pupil to try again.

Related to connectionism are Thorndike's three famous laws of learning. Both depth and scope of pupil learning can be achieved by the proper application of the following three laws: (1) The Law of Readiness, (2) The Law of Exercise and (3) The Law of Effect.[86]

Concerning the Law of Readiness, students learn best when (1) they are ready to learn, (2) when they have reached a proper growth

---

[85] Oberteuffer, op. cit., p. 241.

[86] A. R. Leitch, "Learning Theories and Physical Education," Ontario Secondary School Teachers Federation Bulletin (May 1967), 147.

level, and (3) when they have a keen desire to explore. In consideration of this, it is logical that the physical educator should take advantage of the activity impulses and attempt to develop habits with respect to easier running, accurate throwing, controlled jumping and landing, rather than the development of invented or foreign activities, which go against the grain of motor impulses.

The law of exercise states that the more frequently one practises, the faster one learns, but only if one practises the right way. This law is quite appropriate to the field of physical education. It is of utmost relevance that the learner have a clear picture of the correct way the skill should be performed and receive feedback as to how he is doing.

The Law of Effect states that it is important the way a learner feels about what he is doing. A student in learning a complex skill takes pleasure in the difficulty of the challenge. If isolated skills are taught without emphasizing the purpose of the skills, then students fail to see the value of such learning and the result is a loss of interest.

The third theory, field theory, favours the teaching of the whole versus part learning when instructing a learning activity. Scientific literature supports the theory that skill is shaped through a gradual improvement of the whole action.[87,88,89,90] When the complete

---

[87] B.J.Purdy and M.L. Stallard, "Effect of Two Learning Methods and Two Golf Grips on the Acquisition of Power and Accuracy in the Golf Swing of College Woman," Research Quarterly XXXVIII (October,1967) 480-84.

[88] J.D. Lewellav, "A Comparative Study of Two Methods of Teaching Beginning Swimming" (Unpublished Doctor's Dissertation, Stanford University, 1951).

[89] F.L. Neimeyer, "Part versus Whole Methods and Massed versus Distributed Practice in the Learning of Selected Large Muscle Activities,"

action is too complex to be practised, it is most efficient to break it down into the largest sub-whole that can be handled by the learner. According to Gates, "learning to do parts singly is by no means learning to do the whole. The greatest difficulties are often encountered in putting the elements together."[91] The productive place for part practice is in remedial role, to remedy faults that appear before they become ingrained in the response pattern of the learner. Smith states that current practice is to break activities down into parts too small for effective learning to take place.[92]

Leitch applied the three general types of learning to physical education: primary, secondary and concomitant.[93] Primary learning refers to the learning of a specific skill such as throwing a football, or serving a badminton bird. These skills should be learned at normal speed, and not in slow motion, for one learns rapidly after he gets the kinesthetic feel of what he is doing.

Secondary learning, or associative learning is the knowledge

Sixty-Two Proceedings of the Annual Meeting of the College of Physical Education Association (1958), pp. 122-25.

[90] J.E. Sheard, "The Relationship of Teaching Two Basic Swimming Strokes by Two Methods to Non-Swimmers" (unpublished Doctor's Dissertation, Indiana University, 1959).

[91] A. I. Gates et. al., Educational Psychology (New York: McMillan Co., 1948), p. 347.

[92] Murray Smith, "A Hard Look at Teaching Methods," Alberta Teaching Association, Health, Physical Education Council Bulletin, Council Bulletin, VII (Summer, 1968), 7.

[93] Leitch, op. cit.,p. 148.

that is learned which is not directly related to the skill. For example, the tennis player learns game strategy, game etiquette, the rules, and the care of his racquet in addition to the skill.

The third type of learning is called concomitant learning and is concerned with character development and shaping of attitudes. The physical education has possible some of the greatest opportunities to emphasize learning in this context. Success or failure in game situations is rich in character-shaping possibilities, like self-understanding, integrity and sportsmanship.

The Role of Cognition in Physical Education. Only recently has much thought been given to the effects of physical activity upon learning capacities of the individual. There appears to be a surge of interest regarding this topic.

There is experimental evidence that learners need concepts to think with as they go about learning a physical skill. Cratty,[94] from his experiments with cognition and physical skills, inferred that important thought processes preceed and/or accompany complex physical activity. These thought processes require facts, principles and relationships. In later stages of learning the skill, the importance of thought processes decreased while the importance of motor factors increased considerably.

From another viewpoint, physical activity has come to be regarded by some as "an essential tool in inducing optimal mental

---

[94] B.J. Cratty, Movement Behavior and Motor Learning (Englewood Cliffs, N.J.: Prentice-Hall Inc., 1964), p. 231.

development.[95] By and large, results from correlational studies,[96,97,98,99] have suggested that there may exist a rather low but positive relationship between physical fitness or motor proficiency and general academic achievement; but whether a correlation is high or low demonstrates no causal effect one way or the other. Studies comparing exercise and intellectual gains with mentally retarded individuals have shown significant relationships.[100, 101] Oliver reported that participation in a ten week program of organized physical education resulted in significant increases in IQ's of 25 per cent of the individuals participating in the program.[102]

---

[95] J. Benoit, "Extending the Mind Through the Body," Journal of Health, Physical Education and Recreation, XXXVII (April, 1966), 28-30.

[96] M.E. Hart, and Shay, "Relationship Between Physical Fitness and Academic Success," Research Quarterly, XXXV (1964), 443.

[97] G.L. Rorick, and McKee, "Study of Twenty Third Grade Children Exhibiting Extreme Levels of Achievement on Tests of Motor Proficiency," Research Quarterly,XX (1949), 142.

[98] J.R. Weber, "Relationship of Physical Fitness to Success in College and to Personality," Research Quarterly, XXIV (1954), 471.

[99] C.A. Wedemeyer, "Gifted Achievers and Non-achievers," Journal of Higher Education, XXIV (1953), 25.

[100] W.O. Corder, "Effects of Physical Education on the Intellectual, Physical, and Social Development of Educable Mentally Retarded Boys," Exceptional Children, XXXII (1966), 357-64.

[101] R.L. Kariger, "Physical Education Therapy," Child Study Centre Bulletin (State University of New York), III (1966), 35-41.

[102] J.N. Oliver, "Effect of Physical Conditioning Exercises and Activities on the Mental Characteristics of Educationally Sub-normal Boys," British Journal of Educational Psychology, XXVIII (1958) 155-65.

With regard to learning theory, principles of teaching-learning procedures can be derived from the learning theories based on such concepts as transfer, motivation, readiness, discovery, creativity and the problem-centre approach. The fundamental nature of each of these concepts will be described and then the role that physical education plays in utilizing these concepts will be discussed.

Transfer of Training. In order for education to be useful, school learnings need to be the same as those which life behavior requires. In other words, learning must be transferable from the school situation to life outside the school. This concept of the purposes of schooling is based on the well known theory, transfer of training.[103] It was stated that understanding the fundamentals and ideas of a subject is the main road that leads to transfer of training.

Clayton summarized the ways in which learning could be structured to facilitate transfer as follows:

1. Through identical elements. These may be identical in terms of facts or information, skills, methods, or principles of organization.
2. Through principles or generalizations from one learning situation or organized system that apply to other situations.
3. Through conscious efforts to percieve relationships and to make applications of any learning.
4. Through developing an active intention to transfer or an

---

[103] Bruner, Process of Education, p. 17.

attention to transferable phases.

5. Through greater stress on divergent thinking, open systems or creative thinking that enhance transferability or decrease the rigidity of boundaries.[104]

In physical education the movement-oriented experiences are planned specifically to help children learn to move skillfully and effectively in exercises, games, sports, dances and in all active life situations, both in and out of school. In this aspect much of the curriculum is concerned with the concept of transferability. Two other phases of the curriculum in physical education, learning about how movement affects the body and the role of physical activity in society, also deal with transferability.

Motivation. So much can be said about the importance of the teacher having a deep and thorough understanding of the structure of the subject. But, without the teacher providing a proper environmental attitude for learning, little learning will be achieved. It is necessary to present the materials honestly, in a correct, exciting, and comprehensible way. One of the greatest errors of teachers is teaching skills without revealing their content within the broader fundamental structure. This destroys the structural unity of a subject and results in boredom. Bruner stated that interest is created by rendering material worth knowing.[105]

---

[104]T.E. Clayton, Teaching and Learning: A Psychological Perspective (Englewood Cliffs: N.J.: Prentice-Hall, Inc., 1965), p. 87.

[105]Bruner, Process of Education, p. 31.

Motivation in physical education is sometimes lost because the teacher stresses the wrong things. Placing too much emphasis on the traditional concept of 'physical training', the purpose of which rests on regimentation, repetitive drills, mass calisthenics, results in pupil resentment toward the subject. The new concept of educating through movement, game participation, and individualized learning through discovery and experimentation leads to a revival in student interest and curriculum planning in the physical education curriculum.

Allowing students to choose from a variety of skills permits individuals to follow areas of interest appealing to them. This too increases motivation.

Readiness. Learning can be facilitated by preparing and providing an orderly sequence of experiences arranged and presented in relation to maturity, readiness and ability of each learner.[106]

Bruner's famous statement that "any subject can be taught effectively in some intellectually honest form to any child at any stage of development,"[107] has led to much discussion among educators and learning theorists over the past decade. This was Bruner's theory concerning readiness for learning. The fact was that if the subject or concept to be taught was put into a communicative form understood by the pupil, then learning would take place.

This theory has effected physical education and psychomotor behavior. The concept has been utilized by gymnastic and swimming

---

[106] Bent, op. cit., p. 5.

[107] Bruner, Process of Education, p. 33.

instructors who have introduced new methods of instruction earlier allowing the youngest school children to achieve high standards of proficiency in the prospective activities.

Discovery Learning. Learning through discovery has the obvious advantage of making learning one's own. In discovery, knowledge is internalized, reconstituted, generalized and applied to a hypothesis as a part of the learning process. Four benefits can be derived from the experience of learning through discovery:[108]

1. Increase in intellectual potency.
2. The shift from extrinsic to intrinsic rewards.
3. The learning of the heuristics of discovering.
4. The aid to conserving memory.

The progressive teacher of physical education provides the opportunity for each child to extend his activity experience at his own level of ability. Intelligent guidance is the key and the main function of the teacher becomes controlling the interaction between the child and his environment, for example:

1. The teacher, through the environment, originates the work and provides appropriate experiences.
2. The child discovers facts and extends his knowledge with help from the teacher and group, and he adopts an active approach to learning.

---

[108] J.S. Bruner, On Knowing: Essays for the Left Hand (Cambridge: Harvard University Press, 1962), pp. 83-96.

[illegible]

[illegible]

[illegible]

largely self-motivated and works at his own ability level, and according to previous experience. Unsuitable and discouraging patterns of movement must be guided into meaningful and enjoyable responses.

Discovery involves arranging the environment and setting an appropriate task. This necessitates knowledge of children and ability to set problems and pose the appropriate questions to stimulate a wide range of movement. In physical education it seems that a permissive atmosphere tends to help the able child and a slightly more directive one aids the less able and timid child.[111]

Creative Learning. Creative learning is allied closely with discovery learning. Creative behavior involves divergent thought. The individual is creative if he responds with a large number of varied and perceptive ideas about a situation.

Socially, an individual is creative if he comes through with some idea or invention that is both novel and outstanding. Broudy stated that an individual cannot be taught to produce new and diverse ideas. He may learn to overcome his fears and inhibitions and to be more flexible and versatile in his thought. He learns to establish and maintain the conditions under which his thinking can be most free and most productive from the standpoint of the range and number of ideas which come to him. Open and partially structured situations provide the conditions under which such learning is encouraged.[112]

---

[111] Ibid., p. 8.

[112] Broudy, op. cit., p. 107.

Problem Solving Approach. The importance of the problem-solving approach to curriculum development is quite obvious for the very core of each subject field is the problem of the pursuit of knowledge and truth.[113] The problem solving method searches the cultural content, utilizing the modes of inquiry to help uncover the fundamental structure of each subject.

For the solution of any problem a logical sequence of thinking is required:[114]

(1) Sensing and defining the problem.

(2) Collecting evidence relating to the problem.

(3) Organizing evidence that relates to the problem.

(4) Interpreting evidence.

(5) Selecting and testing hypotheses.

(6) Formulating conclusions.

Problem solving may be beneficial to physical education (1) in teaching new skills, (2) in analyzing errors in skills, and (3) in analyzing some strategies. The thought processes should be active at all times when learning a skill. The student observes, explores and tests. It is the responsibility of the teacher to make proper use of questioning to guide the student in helping him to self-analyze his own mistakes. The conventional method has been to tell the pupil both his mistake and the correction. Learning is advanced more rapidly if

---

[113] A.R. King. Jr. and J.A. Brownell, The Curriculum and the Disciplines of Knowledge (New York: John Wiley and Sons, Inc., 1966), p.23.

[114] M. Lemen, "Implications of the Problem Solving Method for Physical Educators," Journal of Health, Physical Education and Recreation, XXXVII (March, 1966) 28.

one figures out the mistake oneself. For example, if a tennis player's backhand shot consistently hits the net, the instructor might ask, "Do you notice where the ball is going on your backhand shot? What could be causing the ball to hit the net?"

The concept of game strategy in physical education deals completely with the problem solving method. Whether the participant is a chessman, a tennis player or a defensive half-back, there are certain keys to aid in solving the game strategy. Maximum enjoyment will be achieved for the individual who recognizes the value of observing, analyzing and making a personal decision as to how best to solve the problem.

The obvious value can be seen in curriculum development if the teacher is aware of the recent research regarding the nature of learning. If the teacher is familiar with the various principles involved with learning,then not only can he choose the proper teaching methods, but also he can justify his choice.

An awareness of the structure of knowledge supplies the necessary information in which the subject field can be organized emphasizing the key concepts and structuring them into a hierarchial order. The logical element to follow next is the nature of the subject field, or referred to in this thesis as the source of the curriculum.

4. The Source of Curriculum Content

The fourth element selected is the source of curriculum content. When one speaks of the source of curriculum content, the only possible source to consider is that of the total available culture.[115]

---

[115] Johnson, op. cit., p. 132.

Realistically, not all that is available in the curlture can be taught because certain restrictions are placed on the teaching of some materials. Society's value system, goverment bodies, boards of education and the individual schools pose restrictions and limitation on what can be taught. Great emphasis is placed now on the disciplines or subject fields as the source of curriculum content.

The Disciplines as Curriculum Content

> To identify the disciplines that constitute comtemporary knowledge and mastery of the world, is to identify the subject matter of education, the material that constitutes both its resources and its obligations....116

Certain academic schools supported the contention illustrated in the above quotation, and sought through vigorous research (1) to determine the membership and organization of the disciplines, (2) to define the area specific to each discipline, and (3) to outline the syntactical structure of the discipline.[117]

Several relevant issues appeared from such studies which have influenced the development of many other subject areas. First of all, important questions arose pertaining to the classification of disciplines which can apply to the structure of other subject fields and which necessitated precise, explicit, and accurate answers. Appropriate questions were: What are the aims or areas of the disciplines to be investigated? What competencies and habits are required of the

---

[116] J.J. Schwab, "Structure of the Disciplines Meaning and Significances," The Structure of Knowledge and the Curriculum, eds., G. W. Ford., Lawrence Pugno (Chicago: Rand McNally and Co., 1964), p. 11.

[117] Ibid., pp. 10-30.

the practitioners to carry on study in the areas? What modes of inquiry are to be used by the inquirers to bring knowledge to bear on the subject matter? What are the ends, or outcomes for which the disciplines should strive.

Secondly, the importance of inquiry was brought forth. Inquiry has its origin in a conceptual structure. The conceptual structure allows one to formulate a telling question. In turn, this question tells what data to seek and what experiments to perform to obtain the data, and also allows one to interpret the data and what knowledge to infer from it. Thus, the evolution of a body occurs.

Schwab inferred from theory of inquiry that any body of knowledge based on a conceptual structure is only temporary. For the knowledge exposed by a concept gives rise to new knowledge and concepts. This new information gives rise to new modes of inquiry and therefore to new bodies of knowledge.[118]

All fields of study should pose and answer the questions important to a classification of a discipline. Similarly, all fields of study should be organized according to structure and comprised of knowledge in the form of concepts, principles, skills and facts. It is upon this assumption that physical education, as a field of study is based.

The Content of Physical Education. Curriculum content in a particular subject is commonly viewed as a carefully planned and selected sequence of related intended learning outcomes. The purpose of these experiences is

---

[118] Ibid., p. 13.

designed to develop an orderly understanding of the significant concepts in some areas of human knowledge. They are directed toward the development of skill in dealing with the symbols used to express that kind of understanding.

In physical education, these experiences are designed to develop an understanding of voluntary movement as a necessary function of man. As stated by Metheny,

> The central concepts or ideas of physical education are relevant to all movement-oriented experiences, but the immediate subject matter is most commonly organized as exercises, active games, sports and dances....119.

When used in curriculum development, concepts may be defined as generalizations which serve to give structure and organization to a given discipline or subject field. In most subjects, concepts are used in connection with the development of cognitive behavior. But in physical education concepts are interrupted to include the action or psychomotor dimension of behavior as well as the cognitive and effective domains.[120]

Verbal symbols are used to describe, analyze and talk about the ideas under consideration, but many of the central concepts of physical education do not lend themselves to verbal formulation. Content is sometimes expressed through movement skills similar to the ideas of music and the graphic arts.[121]

---

[119] E. Metheny, (ed.), This is Physical Education, Report Prepared by the American Association for Health, Physical Education and Recreation (Washington, D.C.: National Education Association, 1965), p. 5.

[120] Aldrich, op. cit., pp. 5-6.

[121] Metheny, op. cit., p. 5.

The specialized skills of physical education are formulated in three ways: (1) moving the body with and against the forces in the environment, (2) receiving or imparting a force to an object through space, or (3) manipulating other pieces of equipment. Dancing and high jumping illustrate the use of the body against and with the environmental forces. Throwing or catching a football illustrates the second specialized skill. Swinging a golf club, bat or racket demonstrates the third type of specialized skill. Sometimes these skills become very complex as in highly structured games where an interaction of the body, objects and the environment is necessary.

Beginning experiences in physical education allow for opportunities for developing ideas about how space is organized, how time is regulated to space, and how gravity acts on all material objects. These ideas lead to the understanding and formulation of many specific concepts which form the basic structure of physical education: walking, sitting, running, jumping, throwing, lifting, pushing, pulling, exerting force, resisting force, playing, fighting, competing. Once a thorough understanding in many of these concepts has been established, more difficult concepts may be learned such as rhythm, balance, equilibrium, horizontal, vertical and circle. Many of these concepts can be understood and acted out long before they can be verbalized. This exemplifies the non-verbal content, or psychomotor domain of physical education.

Important to educational content is the teaching of concepts associated with socially approved patterns of behaving. In physical education behavioral patterns such as sportsmanship, respect for other persons, and etiquette of play are taught. Social concepts such as

winning, losing and honesty are also learned.

Another area of concern to physical education and not commonly identified with other subjects is concepts involved with the importance of maintaining physical fitness. Exercises involving the cardiovascular system are emphasized along with principles of the cardiac, pulmonary, and respiratory systems.

Physical education is basically an activity program. Its concentration should not only concern itself with skills but also with the background for knowing "how" and "why" a person moves.

Principles, procedures and mechanics which are common to many activities should be identified and their structure be made known. Stress will be placed upon learning the fundamental concepts so that the learning of new activities will be patterned and easier to learn. In this sense the principle of transfer will be applied. A committee representing AAHPER tended to make this implication when it stated:

> Pointing up the interrelationships, showing how the same basic concepts may be illustrated in the simple as well as the more complex activities, and assisting students to analyze newly presented skills and activities for the mechanical principles and problems which are involved -- should be the responsibility of every teacher....122

There are probably three main areas of content that would fall under the jurisdiction of physical education: (1) activity performance, (2) effects of activity, and (3) factors modifying participation in activities and effects of participation.[123]

---

[122]American Association for Health, Physical Education and Recreation, Knowledge and Understanding in Physical Education (Washington, D.C.: National Education Association, 1969), p.x.

[123]Ibid., pp. 1-114.

Activity Performance. Five divisions relevant to activity performance can be outlined: (1) basic sports skills, (2) body mechanics, (3) concepts fundamental to movement skills in strategies and activity patterns, (4) rules and procedures, and (5) protective requirements.

Nine fundamental movements or skills considered basic to physical activity are included in the first section. These fundamental skills can be combined in a number of ways to produce a great number of complex skills. Each combination is determined by the goal that each individual seeks to achieve. Skills basic to sports are identified, as follows:

(1) Running
(2) Jumping
(3) Hopping
(4) Leaping
(5) Throwing
(6) Striking
(7) Kicking
(8) Catching
(9) Swimming

The following list of skills can be included as fundamentals, but are more properly listed as fundamental body mechanics:

(1) Standing
(2) Walking
(3) Sitting
(4) Stooping
(5) Lifting and carrying
(6) Pushing and pulling.

When the above are used in sports skills, they are usually modified or adapted to meet the special requirements of the sport.

In the third division certain concepts fundamental to movement skills in strategies and activity patterns can be listed. The main concept illustrated in this case is that all strategies and/or activity patterns are depended upon efficient execution of basic skills. Two sets of principles provide the basic guide lines for understanding these

basic skills. These are (1) the principles of equilibrium and (2) Newton's laws of Motion.[124] Equilibrium is the state of balance of a body between opposing forces. This degree of stability depends on three factors: the base of support, the centre of gravity and the line of gravity. All other things being equal, the larger the base of support, the lower the center of gravity, and the more nearly centered the line of gravity is over the base of support, the greater is the stability of a body.[125]

The fourth division concerns a section on rules and procedures. Games necessitate a standard set of rules. Rules can be official, set by various governing bodies; local, those modified to solve problems unique to a specific situation; or home, those which are adapted to playground, school yard or other recreational areas. Concepts concerning the various types and purposes of rules must be taught to pupils so that they can appreciate the value of rules. Rules provide organization, fairness, co-operation and authority as well as protection of health and safety for all concerned.

The last division of the first area is protective requirements. Protective requirements concern being knowledgeable about safety rules, regulations, warm up, conditioning, individual ability, size, medical insurance, facilities and equipment.

Effects of Activity. Six divisions of this category can be made. They include the following: (1) immediate effects of activity, (2) long

---

[124] I. Newton, Mathematical Principles of Natural Philosophy (Berkely, California: University of California Press, 1934), p. 9.

[125] C. Brown and Cassidy, Theory in Physical Education (Philadelphia: Lea and Febiger, 1963), p. 65.

term effects, (3) capacity for effort, (4) effective utilization of capacity for skills, (5) effective social behavior, and (6) self-realization and development of cultural, aesthetic, and artistic values.

A field of knowledge bases its content upon scientific research which clarifies concepts related to the area and describes facts which can be used for the practical control of human affairs. These criteria satisfy Brown and Cassidy's definition of a field of knowledge.[126] It is important when teaching the effects of activity, whether they be cortical, psychological, physical, or social, that they be based upon scientific evidence.[127]

If one is talking about the effects of activity, one must also state the concept properly. For example, to say that a normal heart cannot be damaged permanently by exercise is not enough, for the fact remains that many children have had their hearts damaged by infectious diseases to the point that strenuous activity may be very dangerous. Thus an inclusion of the ill effects of exercise is important to teaching as well as teaching the advantages of exercise.

Most of the six divisions of the "effects of activity" are self explanatory. The fourth one, the effective utilization of capacity for skills, develops concepts pertaining to the development of posture, improvement of the basic skill elements (accuracy, coordination, speed,

---

[126] Brown, op.cit., p. 52.

[127] P.B. Johnson, (ed.), "Fact and Fancy or Separating Scientific Foundations from Unsupported Claims for Psychological, Sociological, and Physiological Benefits of Physical Exercise and Formal Physical Education," Journal of Health Physical Education and Recreation, XXXIX (November - December, 1968), 25-40.

balance, agility, flexibility, rhythm, and timing), and development of relaxation.

The sixth division of the "effects of activity" deals with self-realization and development of cultural, aesthetic and artistic values. One can become aware of one's limitations, capacities, optimism, pessimism, initiative, courage, perseverence, and ambition. This is a substantial credit to the field of physical education. Besides gaining an awareness of one's self, one can increase understanding and knowledge of the physical environment. Participating in sport also gives one a medium for perpetuating cultural values. Likewise, opportunities should be provided for the teaching of fundamental movement or movement education which serves as a medium for transmitting non-verbal expression and communication. This type of activity is one of the few that establishes a true value through movement for aesthetic experience, creativity and artistic merit.

Factors Modifying Participation in Activities and the Effects of Participation. In this area a variety of topics are covered such as these: age and maturation, attitudes, sex differences, environmental forces, skill levels, physical condition, fatigue, stress, performance aids, smoking, alcohol and drugs.[128] Concepts for each topic are stated generally keeping in mind the important principles. In this way the central ideas are studied and a wide range of materials can be covered in a short time. This method was the intention of Phenix who stated that, "economy and efficiency in learning, in a time of vast proliferation of knowledge,

---

[128] AAHPER, op. cit., pp. 87-114.

can best be achieved by attending to the 'key concepts' in the several fields of learning."[129]

The curriculum content refers to the concepts, principles, skills, values, etc., that should be selected to be translated into the form of intended learning outcomes. The logical inquiry here is, upon what criteria can the selection of content be based. This process of inquiry is the fifth and proceeding element.

5. Criteria for Selection of Content

A study of curriculum theory over the last sixty years reveals a shift in emphasis concerning curriculum construction and selection of content. During the early part of the twentieth century great importance was given to a subject-centered curriculum. During the 1920's and 30's emphasis was shifted away from the subject itself to the selection of learning activities based on the immediate needs and interests of youth. The problem approach helped achieve a balance by selecting problems that appealed to pupil interest but employed subject matter in investigating them. However, it was found that this approach could lead to a pupil-dominated content.

The effect of the knowledge explosion on curriculum making was that some new approach had to be found to guide the selecting of content.

It is obvious that all that is available and teachable in the culture cannot be included in a given curriculum. Some ideas, because of their logical scope are more important than others in developing curriculum. Therefore, selection is essential and the best method to govern this selection is to outline logical criteria.

---

[129]P.H. Phenix, "The Disciplines as Curriculum Content," Curriculum Crossroads, A.H.Passow, ed.(Teachers College, Columbia University,1962),pp.57-6

First of all, content may be looked upon as kinds of prepositions or as elements of knowledge, expressible in verbal forms. Included in these elements of knowledge are different kinds of prepositions such as facts, concepts (descriptive and valuative), principles, norms, and rules.[130] Each subject field has its own specific content, i.e. facts concepts, principles, skills, norms, etc., and it is the aim of curriculum theorists to outline a logical criteria for selection of learning experiences best suited to attain the goals and objectives of the subject field. This process led to the discovery of the "structure approach" to determine content selection.

Structure Approach Certain theorists, Johnson,[131], Broudy,[132] and Phenix,[133], believed that the selection of content involved an intensive understanding of the rational aspects of the discipline itself. Content was derived from the logical structure of the discipline.

Broudy emphasized the importance of knowing the facts, ideas, and logical relationships among the elements of the specific field.

Emphasis is placed upon discovering the strategic important concepts which underlie each subject field, as well as the logical relationships existing among these concepts. Thus, the structure of a

---

[130] Broudy, op. cit., p. 80.

[131] Johnson, op. cit., p. 133.

[132] Broudy, op. cit., pp. 116-7.

[133] Phenix, op. cit. p. 57.

subject is learned when a student is able to see these relationships and express them in his own vocabulary in terms of principles or, in the case of physical education, when the student can carry out the appropriate movement.

Johnson expressed the same idea in the following way: "An educational curriculum is developed by selecting among and within those organized bodies of knowledge those elements which analysis identifies as having the greatest potential interpretive value."[134]

Phenix stated, "there is no place in curriculum for ideas which are regarded as suitable for teaching because of the supposed nature, needs, and interests of the learner...."[135] This is in contrast to the humanistic approach which includes the nature of the student and society as criteria for content selection.

Humanistic Approach. The curriculum content must bear upon persistent problems of living or current social problems. Humanists emphasize the significance of selection on the basis of experience, needs, and interests of the potential learners. Johnson and others feel that both these criteria are a part of the instructional system and are specific to class, school and community setting.

Showing a diversity of opinion over this same issue, some educators fail to distinguish "the child" and "subject matter" as separate entities. If the selection is based on essential aspects of the interests and concerns of pupils, as well as the structure, then

---

[134] M. Johnson, op. cit., p. 133.

[135] Phenix, op. cit., p. 64.

subject content will not be neglected and initial and intrinsic motivation will be secured. This results in a "humanistic approach" which combines the structure of academic subjects and the needs, abilities, concerns and interests of pupils. Goodlad supports the humanistic curriculum because it focuses on what kind of persons students should be, rather than strictly upon what they know about processes, items and things.[136]

The structure-of-knowledge approach can make provision for transfer of knowledge by helping pupils apply knowledge and principles. The greater the variety of applications, the greater the transfer. Application to areas of pupil interest aids motivation, but this comes after the basic structure is learned.[137]

The humanistic approach provides for pupil readiness. The structure of each subject can be taught at any school age providing that it is presented in the vocabulary of the pupils and is consistent with their experience.

One of the chief values of this approach is that it provides answers to questions pertaining to the selection of learning experiences which cannot be determined wholly through a study of the structure of knowledge and the mode of inquiry alone. Its purpose is to develop an understanding of subject matter content avoiding meaningless repetition while retaining the concerns, considerations and interests of pupils. In this way it increases motivation.[138]

---

[136] Willgoose, op. cit., p. 60.

[137] Bent, op. cit., p. 16.

[138] Ibid., p. 19.

Humanistic Approach to Physical Education. Unique to physical education, as outlined in the general objectives, is the philosophy that physical education is concerned with the total body development of the individual: mentally, to develop understanding of knowledge, skills and attitudes of the effect of movement on the body; physically to teach basic skill movement as well as to condition heart, lungs, muscles and other organic systems to respond to physical demands imposed upon them; emotionally, to teach through movement the aesthetic qualities associated with physical activity; and socially approved patterns of personal behavior with reference to interpersonal interactions in games and sports.

Physical education focuses on the student; therefore, central to the selection of content from the field of physical education are the criteria, the nature of the individual and the society he lives in.

Nature of the Individual. In regard to the nature of the individual, the ideas, interactions, and movement patterns of the physical education experiences should be matched with the intellectual, emotional, social and physical development of the pupils in each age group. The best curricula are those in which these relationships are continually examined in the light of current research in these areas.

Curriculum selection should also provide content which allows for individual differences in ability and interest. This includes knowledge and skills specific for "slow growers" and "fast growers" who may have special needs within the structures of their own age group.

When confronted with a class of different ages and different levels of maturity, four principles can be applied to help the physical

education instructor:[139]

1. Skills that build upon developing patterns of behavior are most easily learned.
2. Training before motivational readiness may bring either no improvement or only temporary improvement.
3. Premature training, if frustrating, may do more harm than good.
4. The more mature the organism, the less training is needed to reach a given level of proficiency.

Related to this is the fact stated by Arnold that:

> In order to make his teaching appropriate he must have a knowledge of the sequential phases of growth and be perceptive enough to realize that within wide ranges of stimulation (training and encouragement), it is the rate of growth (or maturational level) that determines whether or not a skill can be successfully taught or modified....140

Another criteria for selecting content is that the content be based upon the aim and objectives of physical education. Since the objectives grow out of the needs of the individuals served by the program and the society of which they are a part, many of the needs of the individuals are met. Activities must be selected according to their relative contribution to the totality of purposes for physical education.

A further principle for selecting content is that the activities must be meaningful and purposeful to the learner. Bookwalter called this the principle of "Acceptability".[141] According to Gwynn,[142] learning

---

[139] E.R. Hilgard, Introduction to Psychology (Methuen, 1962), pp.71-3.

[140] P.J. Arnold, Education, Physical Education and Personality Development (New York: Atherton Press, 1968), p. 33.

[141] Bookwalter, op. cit., p. 217.

[142] Gwynn, op. cit., p. 594.

experiences, as content, become most desirable and meaningful when they enable students to fulfil present needs, interests and goals. In this way these experiences are not something apart from the student, but rather an integral part of his daily life. The rate, depth, and intensity of learning varies according to individual abilities, drives, purposes, attitudes, and values in relation to felt needs for what is to be learned. Gwynn lists two postulates thought to be of importance for content selection in this matter:

1. Students learn best that which they choose to learn.
2. The greater the alternatives in the choice of subject matter that satisfies student needs and purposes, the more effective the learning.[143]

It should be understood that a distinction must be made between what is called pupil needs, and what is called "whims". The concern is not with short-lived passing interests, but with those that are deep and abiding and that lend themselves to worthwhile curricular activities. It is, then, the teacher who has the responsibility to discover and recognize pupil needs. The pupils themselves can often aid the teacher in determining pupil needs.

This chapter cannot attempt to classify and describe all the problems and needs of children and adolescents. Various psychologists and psychiatrists have researched this area and have produced appropriate descriptions of the needs of children, adolescents and adults. The following investigators have been reviewed for information regarding this area: Fromm, Gesell, Murray, Horney, and Maslow.

---

[143] Ibid, p. 596.

Sydney Rollins, writing for the Association for Supervision and Curriculum Development (ASCD), considered four major problem areas of adolescents as they relate to schools.[144]

1. The Problem of Self-Understanding During Adolescence. This problem recognized the importance of the adolescent understanding himself physically, emotionally, socially and intellectually. Traditional emphasis was placed on intellectual development and to some extent on physical. The social and emotional areas occupied considerably less attention.
2. The Problem of Developing New Ways of Relating to Others. The need is stressed here for adolescents to develop new ways of relating to others -- parents, adults and peers.
3. The Problem of Teacher-Student Relationships. In an attempt for the adolescent to assert independence from his parents, he is also attempting to develop an independence from all adults. Yet, at the same time, the adolescent continues to depend upon adults, particularly teachers, thereby creating a very complex situation.
4. The Problem of the Teaching-Learning Situation. Four components important to the teaching learning situation are motivation, communication, curriculum and methodology. Both teachers and students must share the responsibility for

---

[144] S.P. Rollins, "Youth Education: Problems" Youth Education (Washington, D.C.: Association for Supervision and Curriculum Development, NEA, 1968), pp. 2 - 19.

creating motivation in the teaching-learning situation. Communications is also a two-way process and affects motivation. These two processes are directly related to curriculum and methodology. Without a stimulating curriculum and coinciding methodology both communication and motivation may be lost. This may indeed be a cause of a continuing drop out rate in our schools today.

A study of adolescence in Metropolitan Toronto has been completed recently in an attempt to discover more information and knowledge about the problems of "unreached youth". Processes regarding alienation, deviance and social control were investigated. Suggestions were made as to how social institutions might change to aid in the prevention of these problems.[145]

In relation to the schools, conclusions indicated that the teacher-student relationship was the largest problem. Teachers were regarded by many alienated students as "adult authorities". The schools lacked ombudsmen who could deal objectively and fairly with complaints that might in communicating and relating with students. Sensitivity training was suggested for these teachers in an effort to help them become more aware of their own "hang-ups."

It was brought out that many teachers are too subject-oriented as opposed to human or student-oriented. The need indicated here was for the provision for students and teachers to meet and talk together as fellow human being on any topic of mutual interest.

---

[145] J.A. Byles, Alienated, Deviance and Social Control, An interim Research Project on Unreached Youth in Toronto, June, 1969,

The importance of maintaining a wide variety of extra-curricular activities was advised as a majority of junior and senior high school students participate in some form of school-sponsered extra-curricular programs. It is in this area where physical education takes first place in contributing towards maximum participation in numerous athletic activities both at the intra and inter-school level.

The student who has an intensive desire for physical education, who is highly motivated, enjoys activity and seeks excellence, demands special consideration. This type of student or the "natural athlete" who has the inherent ability to perform most motor activities well, needs enrichment experiences which will provide him with the opportunity to go beyond his level of learning and performance. Many of these students have the desire to pursue physical education as an area of employment. The teacher should utilize their talents and leadership abilities and give them certain responsibilities which present a challenge to them. A most appropriate solution is to provide advancement classes to meet their special needs.

Nature of Society

> To attempt to educate without some awareness of the nature of society and its cultural values would be totally unrealistic....146

The nature of society involves an understanding an analysis of the land and its people, their labor force, their political, religious,and aesthetic values and their national ideology.

---

146 Hall,Dennis, eds., Living and Learning. Provincial Committee on Aims and Objectives of Education in the Schools of Ontario, Department of Education, 1968, p. 23.

It is important for Canadians to realize that their country is the largest country whose resources are controlled by an outside country. Because of immigration and other sociological trends, Canada can be thought of as a multicultural country as opposed to a bicultural one.[147]

Less than 10 per cent of the population live in rural areas today. Expansion of commerce, finance, transportation, services such as welfare, recreation and computerization is taking place. The composition of the work force is changing. People are entering the working world at a later age and are leaving it earlier. Education must be aware of and move with these changes.

Religious and moral values are being questioned. The existance and effectiveness of God are openly and widely challenged. Changing standards of sexual morality are taking place as well as various church opinions regarding birth control. Laws are being challenged. Youth have demonstrated evincing desires to experience more things through the -- psychedelic drugs, gregarious sexual experience, more noise, color, and movement in a "way-out" world.

From a perusal of the nature of the surrounding community from which the school population is drawn, the teacher may have to make adjustments in the curriculum which may have been formulated by sone remote authority. It would be ridiculous to offer exactly the same curriculum items to two different schools, one being an outlying suburban middle class school and the other being an inner city school composed mostly of pupils from low income homes. Hills[148] studied the

---

[147] Ibid.

[148] R.J. Hills, "The Relationship Between the Educational Expectations of Social Class Groups and the Role Expectations Within the Public Highschool" (unpublished Doctor's dissertation, University of Chicago,1961).

relationship of social class and educational expectations in the public highschool in depth. The upper-, upper-middle, and middle class respondents expressed a strong preference for an intellectually orientated curriculum with secondary emphasis on a socially orientated curriculum. The vocational aspects of education were minimized. In contrast, for the lower-, and lower-middle class respondents, the social aspects of education were paramount followed closely by vocational and intellectual expectations in that order. Seager demonstrated that unskilled laborers assigned higher priorities to physical development, consumer skills, vocational preparation, and home and family living. Professionals assigned priorities to aesthetic appreciation, emotional stability, creativity, and intellectual skills.[149]

Teachers should be aware of psychological stresses which conflict with the emerging sub-culture of youth, for example the pressures of conformity among peers. It is necessary to reveal the association patterns in peer groups, and on what social values these patterns are based. A study of society and education would reveal information about the different social strata existing in urban communities. Living and Learning points out that youth reject past values but demonstrate concern over world problems. They want to share in community decisions and are cognizant of media, fashion, the sexual revolution, and the threat of annihilation.[150] It is impressed upon educators that they should respect the student's mind, his interests, idiosyncracies, and his right

---

[149] R.C. Seager, "The Task of the Public School as Perceived by Proximity Sub-Publics" (unpublished Doctor's dissertation, University of Chicago, 1959), p. 101.

[150] Hall, op. cit., p. 46.

to be himself.

According to Gwynn:

> When learning experiences attempt to prepare students for the challenge of tomorrows' problems, and further, when they critically examine the issues and problems of today, students become aware of the important role they must play and the responsibility towards society that is theirs. The exploration of social problems as an integral part of the school curriculum is a means of examining alternative solutions for the actions chosen by students themselves and by others...151

Society today appears to have a variety of problems encompassing mass media, mental sickness and affluence. Arnold identified three main needs of society and suggested how these needs can be aided by physical education. The three needs are listed as: (1) the education need, (2) the psycho-social, and (3) the bio-philosophic need.[152]

Concerning the first need, Dewey stated that education should be a life long process. However, for the great majority, the educative process almost stops dead the moment they leave school. As a result many of them suffer from an indulgent apathy which is marked by passivity and a loss of identity.

It appears from Hoggart's study that the ordinary person neither has the wish nor the ability to go on learning for himself.[153] He prefers to sit, passively absorbing the banal notions of mass media.

It has been predicted that by the year 2000 over one quarter of the average person's life span will be spent on pursuits of his own choosing.[154] Man must be helped and guided to see that this new found

---

[152] Arnold, op. cit., p. 135.

[153] R. Hoggart, The Uses of Literacy (Penguin, 1958).

[154] J.W. Still, "Boredom - The Psycho-Social Disease of Aging," Gereatrics, No. 12 (September, 1957), 577.

freedom is not destroyed by boredom and rendered a burden.

In this physical education has an important contribution to make. About this Riesman makes the following comment:

> The first step may consist of giving play a far higher priority as a product both of society and character than we give it today ... play, from having to be the residue sphere left over from work time and work feeling, can increasingly become the sphere for the development of skill and competence in the art of living. Play may prove to be the sphere in which there is still room for the would-be autonomous man to reclaim his individual character from the pervasive demands of his social character....155

Relating to the psycho-social need, Halliday coined the phrase, "sick society", because of the amount of ill health (particularly mental) which is present in our community.[156] He proposed a remedy by offering the term "integrated health" (synonomous with the psychiatric term "integrated personality"). Many mental illnesses seem to lie largely in the imbalance of modern life with its intensity, loneliness, monotony and commuter travel.[157]

A child can gain release and integration through imaginative play.[158] Menninger, as a clinical psychiatrist, said that good mental health is related directly to the capacity and willingness of an individual to play.[159]

---

[154] D. Riesman, The Lonely Crowd (Yale University Press, 1950), pp. 326-8.

[155] J. L. Halliday, Psycho-social Medicine: A Study of the Sick Society (Heinemann, 1949).

[156] Arnold, op. cit., p. 138.

[157] V.A. Axline, Play Therapy (Houghton Mifflin, 1947), p. 9.

[158] W.C. Menninger, "Recreation and Mental Health," Recreation, No. 42 (November, 1948), 340-6.

Through the manifold nature of its activities physical education can do much to alleviate the frustration, anxieties, pressures and strains that the pattern of modern society imposes. It is hypothesized that physical education acts as a catharsis and sublimation for urges, impulses and agression.[160,161]

The third need of society was the bio-philosophic need. The ease and softness of life no longer makes the demands on the human organism that characteriżed society a hundred years ago. The numerous labor-saving devices may be regarded as commensurate with body-weakening. This growing obsolescence in the coming years promulgates the need for the maintenance of physical fitness and hardiness.

Summary of the Criteria for Selection of Content. The following inclusive list presents a summary and a scheme of the criteria for selection of content discussed in the preceeding section. Each item in the list tends to complement as well as supplement the others:

1. It is important to consider an intensive study and understanding of the structure of the subject field itself in order to derive the important facts, concepts, principles, norms and rules specific to the subject field.
2. The nature of the student should be considered, This includes a study of the student's needs and interests.
   Help can be gained from the field of psychology as to what the important psychological concerns of the learner are.

---

[160] Arnold, op. cit., p. 138.

[161] Kenyon, op. cit., p. 100.

Subsidiary to the nature of the student are the following criteria.

2.1 The content of physical education should be selected according to the growth and development stages of students. The learning activities should be matched with the intellectual, emotional, social and physical development of the pupils in each age group.

2.11 Curriculum selection should provide content which allows for individual differences in ability and interest. This includes content applicable to adaptive skills for slow learners and provides opportunities for special educative skills for advanced pupils.

2.2 The selection of content should be consistent with the general aims and objectives of physical education.

2.21 Each activity selected must contribute to one or more of the objectives of physical education.

2.3 The learning content selected must be meaningful and purposeful to the learner.

2.31 Alternatives in the choice of subject matter relating directly to the needs of learners should be provided so that pupils themselves have an opportunity to make selection applicable to their own interests.

3. The nature of society should be considered a criterion for content selection. This involves an understanding of the land and its people, their labor force, their political, religious, and aesthetic values and their national ideology.

3.1 The needs within society determine educational content.

3.11 Part of the aim of education deals with enabling students to fit into a changing society, content must be appropriately selected to govern this need.

3.111 Learning experiences should allow for the opportunity for pupils to gain knowledge and participate in leisure time activities.

3.112 An important concept that should characterize content selection is the learning experience associated with the ideal of maintaining physical fitness and hardiness.

3.2 The feasibility of selecting content within a specific school, with its administrative control, its facilities, teacher competence and geopraphical location has to be considered. This in no way should limit the selection of content for a physical education curriculum.

6. Scope and Sequence of Curriculum

Like the structure of knowedge and the nature of learning, scope and sequence are interdependent and thus are combined as one element. They are related in the sense that the intended learning outcomes which the scope outlines for teaching must be organized into an appropriate learning sequence. In this way scope always preceeds sequencing.

Scope and sequence are discussed separately because the processes of determining both the scope and sequence of curriculum are different.

Scope. The procedure of selecting the intended learning outcomes is referred to as designating the scope of the physical education curriculum. It is the intention to outline intended learning outcomes which will

supplement the curriculum content and provide the greatest opportunities for the realization of the objectives stated.

The aim is not to restrict innovation and originality on the part of the classroom teacher. Several administrative studies in the past have demonstrated a low teacher-administrator morale as a result of lack of individual autonomy in making decisions regarding program development. This occurs when curriculum guides remain too static and rigid. Teachers as professionals wish to seek full utilization of their talents and training; they desire professional status; they demand that procedural specifications, typical of bureaucratic systems be dropped.[163,162,164]

It is apparent that the teacher's responsibility is to choose the scope of the subject matter. His decision must be based on: a philosophy of physical education, knowledge of the aim and objectives of physical education, an understanding of the body of knowledge and content of physical education, an awareness of the criteria for selection of content and activities, and an understanding of the nature of knowledge and learning in physical education.

Sequence and Organization. Sequencing is an important element to consider in curriculum development. Without a logical sequence of

---

[162] W.G. Bennis, "Post-Bureaucratic Leadership," Trans-action, LXI (July, 1969), 44-51.

[163] E.Hrynyk, and E. Miklos, "Professional Role Orientations of Administrators," Canadian Administrator, VI (March, 1967), 21-24.

[164] N. Robinson, "Teacher Professionalism and Bureaucracy in School Organizations," Canadian Education and Research Digest, VII (March, 1967), 29-46.

learning activities to present to the learner, learning becomes fragmented, incoherent, and purposeless. The essence of organization and direction is lost; so too is the logical structure of the subject field which was supposedly constructed by an intricate process of enquiry.

Tyler looked at sequence and organization and listed three major criteria to be met in building an effectively organized group of learning experiences: (1) continuity, (2) sequence, and (3) integration.[165]

Continuity referred to the vertical reiteration of the major curriculum elements (concept, skills, values). Sequence referred to the importance of having each successive experience built upon the preceeding one, but delving more broadly and deeply into matters involved. Integration referred to the horizontal relationships of curriculum experiences to help the student gain a unified view and to unify his behavior in relation to the elements dealt with.

To thread and bind together the criteria, continuity, sequence and integration with the concepts, skills and values of the subject field, various organizing principles were identified. Some of these principles are listed as follows:

1. Principle of chronology.
2. Principle of the psychological significance of the learner.
3. Principle of increasing the breadth of application.
4. Principle of increasing the range of activities provided.
5. Principles of using description followed by analysis.

---

[165] Tyler, Basic Principles, pp. 55 - 56.

[166] Ibid., pp. 62 - 64.

6. Principle of building a unified world from the specific parts.

The relevant task in arranging a content sequence is the placement of topics in the proper learning order. This leaves the problem of what is prerequisite to what. The question can be left to the subject matter specialist who can specify the logical priorities of content. It is the responsibility of the teacher to combine the logical priority with psychological expediency in a viable teaching strategy.[167]

Given some ordering of content into units, it is suggested that the units can be structured at various levels. Levels are related usually to difficulty in learning. In physical education, learning a complex skill like pole-vaulting is much more difficult than running and leaping. Obviously, the skill of running and leaping will be taught before polevaulting. Similarly, learning the rules of a basketball game is easier than understanding the intricacies of a zone defence.

When a structure of knowledge of a field has been established and its key concepts have been listed in some hierarchical fashion, it has been proposed that the same concepts should be taught at different levels. This implication was made by Bruner and was referred to as the "Spiral Curriculum."[168] The difference between one level and another is that there is a more and less advanced version. The higher the level of instruction, the more it contains complexity, detail and sophistication, even though the same concepts are being taught. This does not mean for physical education that basketball should be taught each year from

---

[167] Broudy, op. cit., p. 252.

[168] Bruner, Process of Education, pp. 52-54.

grades seven through twelve as sometimes is done, for the reason that teaching basketball is not an important concept. The following example will illustrate the ideas:

The concept to be taught in physical education is this:

Movement produces sensations in the muscles and joints which can be interpreted as range of motion, position and plane, rate of motion, position and plane, rate of motion, et.

Level	Principles to Be Taught
Elementary	The kinesthetic sensations can be used as an aid in learning new motor skills.
	The kinesthetic sense aids in refreshing skills previously learned.
	Kinesthetic functions enable the blind to be proficient at motor skills.
	Kinesthetic sensations aid in the process of refining skills.
Junior	Kinesthetic sensations are a protective mechanism in time of danger.
	Kinesthetic sensations enable the individual to perceive the position and movement of a body part or of the entire body.
	Sensations become meaningful to the person on the basis of experience.
Senior	There are receptors in the muscles, ligaments, tendons, and articular cartilages which are stimulated by the tensions created in the muscle during contraction and stretching,and by the changing relationships of articulating parts (kinesthetic receptors).

> Kinesthetic sensation, as a guide to movement, enables the individual to concentrate on something other than the performance of the skill.
>
> Kinesthetic experience provides the empathy necessary for maximum value in observing demonstrations or films depicting skills.[169]

The preceding example illustrated how the same concept can be taught at three different levels, elementary, junior and senior. At the senior level, the terminology was more advanced, the understanding was more complex and the material was more specific.

It has been common in the past to sequence learning activities by the year when actually sequencing should be continuous, Kindergarten through Grade 12. With the introduction of a non-graded approach to education, the planning for continuity is essential. In practicality, the continuous learning experiences should coincide with the continuous growth of pupils which is the cardinal premise for such a policy regarding sequence.[170] An aid to the principle of continuity is the fact that there should be a general recognition of the basic similarity and interrelationship of objectives of education from Kindergarten through Grade 12; the continuity is achieved through "purpose".[171] This means both pupil purpose and the larger organization of program purposes should coincide which will enable the principle of continuity to be achieved.

---

[169] AAHPER, op. cit., p. 58.

[170] Brown, op. cit., p. 126.

[171] Association for Supervision and Curriculum Development, A Look at Continuity in the School Program (Washington, D.C.: NEA, 1958), p. 118.

Physical education lends itself to a natural sequence of experiences. To begin with, the child is introduced to general ideas and movement patterns stressing the use of large-muscle groups. As development and learning occur simultaneously, more complex skills are taught which emphasize more precision in movement, thought, coordination, and fine muscle groups. The same procedures are followed in learning games, sports and dances.

Usually, the fundamentals are always taught before rules, playing the game, and game strategy. When learning the racket or stick games, there exists a logical teaching sequence which should be followed generally. In most cases all racket sports are introduced by teaching the proper grip, then the strokes without the ball, then with the ball and so on.

Development and learning proceed from the general to the specific, from the simple to the complex and from the center towards the periphery.[172] An example of one of the most frustrating games to play without a knowledge of the fundamentals is lacrosse, which will help to demonstrate the forementioned principles. Both throwing and catching with a lacrosse stick may be learned naturally after the mechanics of the lever action have been explained. A more difficult skill, one which would likely follow the first two skills, is the concept of "cradling" the ball while running, twisting and turning. The learning of the concept is achieved more rapidly if the physical theory behind the skill is explained. Running causes both a horizontal movement and a vertical movement of the body, and therefore a horizontal force and a vertical force. It is this

---

[172] Metheny, op. cit., p. 7.

latter force which primarily is responsible for causing the ball to fall out of the "pocket" while running. A movement of the wrists which results in turning the lacrosse stick inward or outward is necessary to counteract the vertical movement of the ball. With the learning of these three skills completed the pupils are ready to play a simplified game of lacrosse. Three step lacrosse emphasizes passing and catching. Zone lacrosse introduces some running with passing and catching. Field lacrosse emphasizes the complete game. As the teaching unit advances, the more specific parts of the game may be taught, while at the same time, the pupils are having maximum enjoyment from some type of game participation. Teachers then should look for the logical procedure of sequencing the learning experiences while stressing the principles, general to specific, simple to complex, and from the center toward the periphery.

Intramurals. Sequencing and organizing the physical education curriculum should consider another type of coordination of learning experience. It is best to integrate the activities in the intramural program with the activities being taught in the required and service programs. Not only does it give the student a chance to improve his own ability in the activity, but it also improves the quality of the required program.

Intramurals in a school should be consistent with the instructor's philosophy of physical education. Maximum participation and ability groupings are two important principles common to all intramural programs. Maximum participation means that all students should have the opportunity to compete in any intramural activity. This includes a wide range of activities covering a diversity of student interests. Some programs

include co-educational activities and teacher-student activities. Ability groupings refer to the various levels into which each activity should be divided to allow the student to compete with other pupils having approximately the same degree of ability. This does not mean grouping activities by grade or age. Ability groupings are accomplished within both grades and ages.

In conclusion, since learning experiences should be matched with the intellectual, emotional, social and physical development of pupils in each age group, the program should include a sequence of learning activities for motor-deficient students, average ability students and exceptional students. This sequence is achieved if each successive experience for each ability group is built upon the preceding one; continuity is achieved if the principles of the "spiral curriculum" are followed; and integration is achieved if the intramural program can be used to benefit the required program.

Conclusion

The elements of the curriculum development system have been identified and described. When a specific curriculum is to be developed, each element serves as a criterion about which to make decisions concerning the curriculum. Each element contributes both uniquely and interdependently to the formation of a structured series of intended learning outcomes. To leave out an element would result in an inadequacy of the curriculum.

B. THE CURRICULUM

Intended Learning Outcomes

In order that the physical education process may be functional, certain specific traits and qualities must be acquired by the learner. These traits and qualities are the products of a good physical education program and may be referred to as actual outcomes. Aims, purposes, and objectives should not be confused with outcomes. Aims, purposes and objectives refer to what is to be planned to do. Outcomes refer to what was actually done.

An appropriate method to arrive at these actual outcomes is to compile a list of intended learning outcomes unique to each level of instruction, i.e., to specify what it is intended that students learn. In this sense intended learning outcomes prescribe the results of instruction and thus are concerned with ends. If the actual outcomes from instruction can be measured, then they can be compared with the intended learning outcomes anticipated for each level or unit of instruction. This procedure allows for the evaluation of the quality and quantity of learning that has taken place as well as teacher and program effectiveness.

Three categories or domains of learning outcomes are commonly recognized, the cognitive, the affective and the psychomotor.[173] The formulation of a structured set of intended learning outcomes therefore will encompass an analysis of the subject matter of physical education, the students to be taught and the nature of the society in relation to all three domains of behavior.

---

[173] Johnson, op. cit., p. 130.

Learning outcomes that would affect the cognitive domain would include knowledges, judgements, insights, and understandings appropriate to physical education. Knowledge and understanding have always been considered essential elements in the teaching of physical education. Present day pressures for the re-examination of curriculum and procedures demand that more attention be given the creative use of the intellect in physical education.[174] Some examples illustrating the intellectual content of physical education are as follows: students' ability to analyze skills, game situations, and dance steps, to plan strategies, to solve problems related to physical education experiences, to understand how specific techniques of movement are applied and how complicated skills are developed from basic movement principles, to understand rules, and how physical, physiological and environmental influences affect movements.

Learning outcomes in the affective domain would include attitudes, appreciations, ideas and emotions. Intended learning outcomes should be evaluative. However, many of the effective behaviours cannot be measured objectively by tests. In this case, the teacher must make subjective assessments, which should be based on many observations of samples of pupil behavior. Subjective judgement is required to assess sportmanship, leadership, cooperation and similar behaviors important to the total development of an individual in sport. Tests are available to assess student interests, attitudes, personality, sociometric relationships, values and similar components of human behavior.[175]

---

[174] Nixon, op. cit., p. 267.

[175] H.M. Barrow, and McGee, A Practical Approach to Measurements In Physical Education (Philadelphia: Lea and Fabiger, 1964).

Modern measurement and evaluation tests describe these tests and cite the degree of validity, reliability and objectivity.[176, 177, 178,

The nature of a particular intended learning outcome limits the range of possible learning experiences and thus guides instructional planning. No curriculum item fully defines instructional content, but it does define it to some degree. Although there are many ways of developing a concept, an intended learning outcome rules out certain possible activities and favors others.

The curriculum is not a random set of items but it is a structured set of intended learning outcomes. Curriculum indicates both the temporal and hierarchical relationships among the intended learning outcomes.

C. INSTRUCTIONAL SYSTEM

Instructional content includes not only that which is implied in the curriculum, but also a large body of instrumental content selected by the teacher, not to be learned, but to facilitate the desired learning. Concepts are not learned directly but rather through numerous encounters with specific manifestations, the selection of which is an instructional, rather than a curricular function.

---

[176] H.H. Clarke, Application of Measure to Health and Physical Education (Englewood Cliffs, N.J.: Prentice-Hall, Inc., 4th ed., 1967).

[177] D.K. Mathews, Measurement in Physical Education (Philadelphia: W.B. Saunders Co., 3rd ed., 1968).

[178] C.E. Willgoose, Evaluation of Health Education and Physical Education (New York: McGraw-Hill Book Co., Inc., 1962).

Johnson identified three components of the instructional system: planning, executing, and evaluating. Each component will be discussed, but it is not the intention of this thesis to describe and develop the instructional system to any great degree.

Planning

There are various levels associated with instructional planning. Most remote is the strategic planning which results in the design of courses and units within courses. This involves the selecting and organizing of appropriate curriculum items (intended learning outcomes) for instructional purposes. Considerable freedom for selection is usually allowed so long as the hierarchical order of curriculum items is not disrupted. Several versions of each course may have to be planned to take into account differences in students' ability and readiness.

The process of instructional planning is continued up to and throughout the execution stage. Teachers must make final choices in learning activities, characteristics of students, availability of resources and teaching methods.

Executing

Executing refers to the actual process of carrying out those ideas planned in the instructional setting. Two sets of interaction may be involved with executing. One is the transaction between the student and the environment manipulated by the teacher and the other is an interpersonal interaction between the teacher and the student.

Evaluating

Two purposes of evaluation are described in the model: instructional

evaluation and curriculum evaluation. Instructional evaluation involves a comparison of the actual learning outcomes derived from instruction with the intended learning outcomes prescribed for instruction. For purposes of such a comparison it is necessary to create a situation in which the student can exhibit behavior indicative of what he has learned.

Curriculum evaluation refers to testing the structural validity of the intended learning outcomes. This may necessitate the re-analysis of the elements of the curriculum development system. The elements fluctuate continuously in accord with changes within the nature of the student, the nature of society and the nature of the subject field. On the basis of instructional experience, curriculum items might be found to be incorrecly ordered or the hierarchical relationships might be found to be incomplete.

In general, the fundamental purpose of evaluation is to provide feedback and guidance whereever and whenever feedback and guidance are necessary. An analysis of what evaluation in education is for has shown that it is needed by a variety of persons - the learner, the parents, and the teachers - as well as for institutional purposes. Evaluation also takes on a variety of forms.[180]

The ASCD Yearbook committee evolved a basic criteria which must be satisfied in order for a system of evaluation to be effective. The

---

[180] F.T. Wilhelms and P.B. Diederich, "The Fruits of Freedom," Evaluation as Feedback and Guide, Nineteen Sixty-Seven Yearbook of the Association for Supervision and Curriculum Development (Washington, D.C.: NEA 1967), p. 234.

criteria appears briefly, as follows:[181]

1. Evaluation must facilitate self-evaluation. In this respect the most important outcome of evaluation is what happens within the learner himself. The learner must recognize what is to be learned, why it is important and how it relates to himself. To whatever extent he has succeeded, he must understand how and why he has or has not achieved mastery. This information is crucial to his future learning and development.

2. Evaluation must encompass every objective valued by the school. This has reference to the total evaluation system, which includes a personal sensitivity and institution on the part of the teacher. There is more to a school's evaluation than just subject matter mastery. "Side effects" such as spirit of inquiry, sensitivity to beauty, and a moral commitment to consciencious citizenship may be evaluative aims within the school and therefore hold importance in that essence. Too much emphasis has been put on evaluation which required the learning of facts and, too often, a failure in a test decided the future of a student's scholastic success without consideration of other objectives.

3. Learning must facilitate learning and teaching. Evaluation in this sense must be viewed as a means and not totally, as an end. It serves as a means to aid the teacher in realizing his instructional progress and gives him direction in how to proceed with the teaching. It serves as a means to aid the students in diagnosing their own progress.

---

[181] Ibid., pp. 4-8.

4. Evaluations must produce records appropriate to the purposes for which records are essential. Records should be in such good order that whenever they are needed, they can deliver exactly that information which is truly significant. Grades, test scores, credits, etc., are enormously important at crucial times in a student's life.

5. Evaluation must provide continuing feedback into the larger question of curriculum development and educational policy. In relation to evaluating intended learning outcomes, a re-analysis and interpretation of the elements of the curriculum development system would be in order. This procedure would satisfy the fifth criteria stated by ASCD. Although the characteristics of each element might change from time to time, the basic format of the model should remain relatively stable. In this sense the value of the model is illustrated.

CHAPTER V

HYPOTHETICAL TEST FOR THE MODEL

Purpose

The purpose of this section is to test the validity of that aspect of the model which has been designated as the curriculum development system. The curriculum development system was used to generate examples of intended learning outcomes (designated as the curriculum).

The curriculum is not a random set of items but it is a structured set of intended outcomes. This in fact means that curriculum indicates both the temporal and hierarchical relationships among the intended learning outcomes.

If, in an empirical sense, an appropriate curriculum could theoretically be generated without any major complications, voids or errors, then the model would be declared functional or operational.

Hypothetical Situation

School. The school chosen is a highschool collegiate vocational institute. Its population is 1600 students. The area in which the school is located is predominantly middle class tending towards the upper-middle class. School attendence is approximately 90 percent urban with 10 percent rural.

Facilities. The school facilities available include one large double gymnasium, a swimming pool, one weight room, an exercise room, a health laboratory, three large outside playing fields, and a 1/4 mile track and field facilities. There is also access to a variety of

recreational facilities located throughout the community as well as a nearby lake appropriate for boating and swimming.

The Curriculum. The curriculum to be developed is a senior boys physical education curriculum, which will subsequently allow for the development of a senior boys program (the instructional system).

Students. The students are boys ranging from 16 to 18 years of age.

Application of the Model

Philosophy. The first guideline to consider is philosophy. Both the department's and the teacher's philosophy must be taken into consideration. The essence of the general department philosophy gives direction to the individual philosophy of each teacher within the department. The following key principles may be set down by the department to guide the physical education teacher:

1. Physical education is concerned with education through the physical as well as of the physical.
2. Physical education is concerned with the total development of each individual. Its aim is to seek an integrated organism.
3. Physical education attempts to meet the needs, interests and abilities of students.

The first principle informs the teacher that his intended learning outcomes must emphasize more than participating in physical activity. His students must learn knowledges, techniques and values through movement. For example, besides students learning the proper technique to run a mile, the teacher must emphasize the effect that running has on the student's physiological system.

The second principle makes the teacher aware of the importance of recognizing the social, emotional, mental and physical development to be gained through physical education.

The third principle guides the teacher to direct the curriculum toward the needs and abilities of senior students. Learning should also be compatible with the capabilities of the individuals. Informed of the necessity of "knowing" his students, the teacher may realize that as these teenagers move toward maturity, the learning outcomes of the program should be restated in adult terms. Adult patterns of behavior, adult standards of performance, and personal responsibility for the development of individual abilities should be stressed in all phases of the instructional program.[182]

Voltmer and Essliner, listed the following characteristic which would aid the teacher in his search for knowledge concerning the nature of the senior student:[183]

> Senior high school students' physical characteristics:
>
> Height and weight: girls' heights about constant; weights will increase. Some boys are pubescent and others post-pubescent all increase in weight, rapidly.
> Strength: boys grow much stronger; arms and shoulder girdles still deficient. Girls reach peak at sixteen and decline or remain stationary thereafter.
> Coordination: gradually improves.
> Skeleton: well calcified, but posture is poor.
> Circulatory system: in terms of adult efficiency, 82% at 16 90% at 17, and 98.5% at 18. Strenuous activities are appropriate.
> Endurance: no barriers to proper conditioning, except in a few pubescents still growing rapidly.

---

[182] Metheny, op. cit., p. 15.

[183] E.F. Voltmer, and A.A. Esslinger, The Organization and Administration of Physical Education (New York: Appleton-Century-Crofts, 4th ed., 1967), p. 133-134.

Reaction time: better than at previous ages.
Motor ability: rate of motor learning increases.
Greater ability to handle the body. Pupils are eager to perfect skills.

Senior high school students' psychological characteristics:

1. Further narrowing of interests and trend toward specialization.
2. Still an age of loyalty and cooperation, but the desire to belong is tempered by consideration of personal interests and advantages. Still an age of team games.
3. Marked development of self-confidence.
4. Greater powers of attention and reasoning. Increase in ability to participate in group planning and problem solving.
5. Strong interest in grooming and personal appearance by both sexes. Boys are much interested in their physical development,
6. Hero worship is still a strong influence.
7. Fighting tendency is strong in boys. They are highly competitive.
8. Girls have an inclination to be attracted by passive social activities.
9. Strong interests in opposite sex.
10. Increased interest and ability in leading.

From the characteristics above, implications can then be made concerning the intended learning outcomes. For example, knowing that the arms and shoulder girdles of senior boys are still deficient in development, a logical intended learning outcome is increase of strength of the arms and shoulder girdles by providing appropriate stressors to these areas. The teacher then has the opportunity to select the activities which will achieve this intended learning outcome, such as weight training, circuit training, gymnastics, wrestling, and rope climbing.

Student questionnaires may be given to locate areas of speciality, interest and criticism. Measurements should be taken to determine individual students' levels of motor efficiency. Adolescent psychology texts can aid the teacher in developing a broader perspective regarding the nature and personalities of later adolescents, between the ages of 16 and 18.

In order to gain consistency in teaching procedures and practices, it is necessary for the teacher to set down his own philosophy and to demonstrate how it will influence curriculum decisions. Teaching such principles as cooperation, self-responsibility, maximum participation, respecting the rights of others, and leadership is going to influence curriculum decisions. If the students are aware that the teacher has set very few rules, that he approaches them as adults and establishes a democratic atmosphere, then the learning outcomes regarding cooperation self-responsibility and respecting the rights of others may indeed be achieved.

General Aim and Objectives. The general aim and objectives are linked quite closely to the general philosophy of the department. Both the general aim and objectives should be written down by the teacher and interpreted to the senior students. The teacher should hold these idealized purposes as ultimate goals for which to strive. Each general objective can be analyzed and synthesized to reveal more specific objectives which can be expressed in the form of intended learning outcomes for the student to achieve. To illustrate this procedure the following examples may be used:

One of the general objectives stated in this thesis is, "To develop skills, knowledges and attitudes essential to satisfying, enjoyable physical recreation experiences engaged in voluntarily throughout one's lifetime." In attempt to achieve this general objective, the teacher might include the following specific objectives or intended learning outcomes:

1. To expose the student to many different forms of recreation that a young adult may enjoy during school

years and in later years.

2. To acquaint students with the physical activity and recreational resources existing in and near their community. Lectures, guest speakers, visiting community facilities and participating in them would meet this outcome.
3. To provide opportunities for individual leadership development. Community projects, and organizing special activities within the school are opportunities of this kind.
4. To provide insight into the maintenance of facilities and equipment, and programming activities by having students organize special athletic events, e.g., trackmeets, intramurals, after school service programs.

These four intended learning outcomes may be a proliferation of one of the five general objectives. It is necessary to organize the curriculum systematically by defining specific objectives, behaviorally in such a way as to guide the instructional program.

Structure of Knowledge and the Nature of Learning. The structure of knowledge concept implies that there are central ideas or underlying generalizations within a field of study. Bruner suggests that knowledge of these central ideas facilitates learning. By such a learning approach it is not necessary to learn isolated facts and skills. Experience designed to teach by generalizations that underlie physical activity would theoretically improve the quality of learning. A learning outcome that is logically derived from this element can be stated. Students should understand those basic concepts that underlie physical activity.

If the basic concept or generalization to be learned was that

physical elements of the enviroment affect the performance of man, then the teacher and his studies may come to understand this concept in various ways. Canoeing, sailing,orienteering, swimming or skiing provide opportunities for students to learn skills which on the one hand overcome the negative forces of wind, rain, snow, water, or land and on the other hand use those elements to facilitate skill or survival.

The same concepts, skills, and values may be learned through activities such as basketball, tennis, and wrestling should the teaching setting lend itself more readily to these kinds of activities.

Source of Curriculum. The source of curriculum for physical education is the nature of the subject field, physical education. Physical education, as a subject field refers to the central concepts or ideas of physical education which are relevant to all movement-orientated experiences, but the immediate subject matter is most commonly organized as exercises, active games, sports and dances. The concepts may be defined as generalizations which serve to give structure and organization to the subject field.

Concepts may be interpreted to include all three types of behavior: the cognitive, the affective, and the psychomotor behavior. Intended learning outcomes appropriate for senior students should include knowledges, skills and values which are structured at a level which challenge the learning capacities of these student. Senior students should have an ability to understand complex concepts, to think abstractly and to apply their thinking to other forms of physical activity in daily living.

If the concept of physical condition is to be studied, one approach is to discuss the factors that affect man's capacity for effort. The following factors might be given as an example: (1) the amount of

immediate available energy in the muscle, such as phosphocreatine or adenosentriphosphate, (2) the amount of buffer in muscles and blood available for neutralizing the lactic acid formed when glycogen yields energy in the absence of oxygen, and (3) the ability of the lungs, heart, blood, and circulatory apparatus to capture and deliver oxygen to the active muscles, so that lactic acid may be oxidized or re-synthesized to glycogen and thus spare the buffers.

The same concept may be understood in an entirely different way through actual physical experience of the effects of fatigue caused by continuous exercise. In this way the concept is expressed through movement or psychomotor behavior. An intended learning outcome connected with this concept and expressed through the affective domain of behavior is, to understand the self by developing an optimal state of physical condition.

Criteria for Selection of Content. The criteria outlines three main considerations to account for in selecting curriculum content:

(1) the nature of the subject field, (2) the nature of the individual and (3) the nature of society. The first two considerations have been discussed.

A study of the society from which the senior student comes, will give direction to curriculum decisions regarding content. The fact that many of the students will be graduating reflects a de-emphasis on team sport to the learning of individual and dual sports favored by adults. Tennis, badminton, handball, table tennis, curling, golf, swimming, bowling, broomball, archery, billiards, canoeing and wrestling provide a wide range of skills for individual choice. Regional favorites are snow skiing, fly-casting, ice-skating, and water skiing, An appropriate

intended learning outcome for the senior students in this regard might be, to increase interest and ability in individual and dual sports by providing the opportunity to learn a wide variety of individual and dual sports and to offer instruction at beginner, average and advanced levels.

The societal need of individuals maintaining sound and organically fit bodies must be recognized by the teacher and be regarded as a learning outcome in the teaching of senior students.

The society, being recognized as a highly social one, should influence education to create more co-educational activity. The need for co-educational activity is often reported by senior high school physical education students. The teacher should permit projects, gymnastics, dancing, and swimming to be done co-educationally. Recreational activities such as camping, canoeing, curling and skiing provide equal opportunity for co-educational activities.

The teacher should realize that since the majority of the students come from upper middle class Canadian families, their leisure time activities would include tennis, golf, skiing, curling and maybe sailing. Emphasis should be placed upon encouraging these sports as opposed to sports like soccer, volleyball and cricket which might be more favorable with ethnic students.

Scope and Sequence. The scope of the curriculum limits the total subject field of physical education to what content will be required for the senior curriculum. It directs the statement of intended learning outcomes, in the form of knowledges, skills and values, to be prescribed for learning.

The intended outcomes are placed in a hierarchical order. In this way, order and structure become an integral component of curriculum and

thus the definition, "a structured set of intended learning outcomes," is derived. This process is referred to as sequencing the curriculum. Sequencing in physical education is somewhat different than in other subject areas. For example, some curriculum decisions are affected by external factors like climate and facilities. However, the relevance of sequencing rests with teaching the most important concepts first while proceeding from the simple to the complex and from the general to the specific.

To illustrate scope and sequence in curriculum the following example is given: Voltmer, in his list of psychological characteristics common to the senior student, stated boys demonstrate a strong interest in the opposite sex and also, boys are highly competitive. Two intended learning outcomes derived from these psychological characteristics of boys may be (1) to develop social attributes and behavior by providing various co-educational activities and, (2) to maintain the competitive nature of boys by providing opportunities for highly competitive contests like wrestling, judo, track and field or muscular endurance tests. There appears to be no hierarchical relationship between these two curriculum items; therefore, sequencing, in this case, may not be important. But, sequencing within each curriculum item may still be relevant. For example, a student who is highly competitive and wishes to be the strongest wrestler in his weight class may find it advantageous to receive some instruction in weight lifting to improve his overall strength. To go a step further, sequential procedures of weight lifting are of prime importance to gaining strength.

In most cases it is wise for the teacher to stress the values to be derived from curriculum items before instruction begins. This

sequence contributes to a more purposeful curriculum. In this way, the student knows why he is participating and what he is attempting to accomplish.

Once the teacher has reviewed the elements of the curriculum and has formulated his structured set of intended learning outcomes, he must use these curriculum items as a prescription for what to include in the instructional system. He must ask the question, what activities, methods and materials must be selected in order to achieve the intended learning outcome. This stage of analyzing and reasoning is called the planning stage. After these decisions have been made, the execution or teaching phase begins. The only step remaining is to evaluate the results of instruction, the actual learning outcomes, and compare them with the intended learning outcomes.

Conclusion. The curriculum model, having been followed in a general way appears to be consistent and complete, and hypothetically functions as a guide and criteria for curriculum development in physical education. The example given acted as a theoretical test in that it provided the author with a practical situation in which a curriculum had to be developed. Therefore, the questions that might have been asked by a physical educator concerning the procedure and process for developing a curriculum, were answered by the format of the curriculum model. To this extent the model is declared operational.

CHAPTER VI

SUMMARY AND CONCLUSIONS

Summary

The purpose of this study was to construct a model which would provide a structure for the subsequent development of curriculum for physical education. The investigation was prompted by the opinion, expressed by many writers, that physical education lacks a theoretical foundation upon which to build curriculum. Curriculum theory, by observation and analysis, critically examines the issues of curriculum, clarifies its terminology, identifies the elements and their relationships and brings order and understanding to complex curricular phenomena.

The thesis supported the contention that curriculum guides instruction; therefore once curriculum has been developed, it serves as a prescription for program development. In this light, the model depicts curriculum as an output of the curriculum development system and an input into the instructional system or the program development system. Curriculum was defined as, "a structured series of intended learning outcomes." Intended learning outcomes refer to what it is intended that students learn.

The model showed the interaction among the curriculum development system, curriculum and the instructional system. Curriculum was derived from the curriculum development system which was composed of six basic elements: (1) philosophy, (2) general aim and objectives, (3) structure

of knowledge and the nature of learning, (4) source of the curriculum (nature of the subject field), (5) criteria for selection of content, and (6) scope and sequence. Each element was defined and described as it related to the field of physical education. The six elements separately influence the decisions about the selection of the intended learning outcomes.

The curriculum acts as an outline and must remain flexible at all times. It does not dictate procedures for instruction. Teachers have their freedom to utilize their talents and choose activities, teaching methods and materials which might bring about the desired outcomes.

The instructional system was comprised of three operations: (1) planning, (2) executing, and (3) evaluating. Planning referred to deciding what learning experiences, teaching materials, and methods would likely produce the intended learning outcomes. Executing referred to the comparison of actual learning outcomes, derived from instruction, with the intended learning outcomes prescribed for instruction.

A hypothetical school situation was described in order to use the model to direct the process of developing a specific physical education curriculum for senior boys. The purpose of this was to test the validity of the model.

Conclusions

A need was substantiated for comprehensive research in curriculum theory for physical education. The model has been utilized as an appropriate method for understanding curricular phenomena.

In the hypothetical school situation, the model made it clear to the teacher what procedure to follow in developing curriculum.

Since the components and elements of the model were depicted, defined and described, terminology appeared to be clarified. Relationships between the three main components, the curriculum development system, the curriculum and the instructional system were described, as well as relationships among and within the elements of the curriculum development system. A hierarchical arrangement was evident among the elements.

Each element of the curriculum development system served as a criterion for making decisions about the intended learning outcomes. Examples of intended learning outcomes were given for each element which enabled the teacher to select appropriate learning experiences for instruction.

Although the example was hypothetical, it appeared as if the teacher could have developed a comprehensive, structured and purposive physical education curriculum. To this extent it may be concluded that the model is operational and valid. The model provides a theoretical foundation upon which to construct curriculum for physical education at any educational level.

Recommendations

1. A long term practical evaluation of this model should take place. The model should be used to direct the process of curriculum development in an actual school situation. Following the format outlined by the model will provide a comprehensive test for the validity of the model.

2. Each element of the curriculum development system needs to be studied in depth to reveal the role it plays in physical education.

3. Further research in curriculum theory for physical education should take place for no other immediate purpose than to increase

understanding of curricular phenomena. The theoretical clarification that is brought about may ultimately benefit both scholars and practitioners in their efforts to improve curriculum.

BIBLIOGRAPHY

Books

Aldrich, A. Cooperative Development of Design for Long-Term Research Project Directed Toward the Identification and Evaluation of a Conceptual Framework for the Curriculum in Physical Education, Grades K-16. Report of an Inquiry Supported by the U.S. Department of Health, Education and Welfare. Washington, D.C.: AAHPER, 1967.

Alley, L. "Research and the Curriculum in Physical Education." Research Methods in Health, Physical Education and Recreation. Washington, D.C.: AAHPER, 1959, pp.398-422.

American Association for Health, Physical Education and Recreation. Knowledge and Understanding in Physical Education. Washington D.C.: National Education Association, 1969.

Arnold, P. Education, Physical Education and Personality Development. New York. Atherton Press, 1968.

Association for Supervision and Curriculum Development. A Look at Continuity in the School Program. Washington, D.C.: National Education Association, 1958.

Axline, V. Play Therapy. Houghton Mifflin, 1947.

Barrow, M. and R. McGee. A Practical Approach to Measurements in Physical Education. Philadelphia: Lea and Fabiger, 1964.

Beauchamp, G. Curriculum Theory. Wilmette, Illinois: Kagg Press, 1961.

Bent, R. Secondary School Curriculum. Boston: D.C.Heath and Co., 1969.

Bookwalter L. and J. Vander Zwaag. Foundation and Principles of Physical Education. Philadelphia: W. B. Saunders Co., 1969.

Broudy,S. et al. Democracy and Excellence in American Secondary Education. Chicago: Rand McNally and Co., 1964.

Brown, C. and R. Cassidy. Theory in Physical Education. Philadelphia: Lea and Fabiger, 1963.

Bruner, J. On Knowing: Essays for the Left Hand. Cambridge: Harvard University Press, 1962.

_____. The Process of Education. Cambridge: Harvard University Press, 1960.

Burke, R. "Physical Education and the Philosophy of Pragmatism." Philosophies Fashion Physical Education. Dubuque, Iowa: Wm. C. Brown Co., 1963.

Byles, T. Alienation, Deviance and Social Control. An Interim Research Project on Unreached Youth in Toronto, 1969.

Clarke, H. Application of Measure to Health and Physical Education. Englewood Cliffs, New Jersey: Prentice-Hall, 1967.

Clayton, E. Teaching and Learning: A Psychological Perspective. Englewood Cliffs, New Jersey: Prentice-Hall, 1965.

Cohen, D. "The Development of an Australian Science Curriculum Model." Unpublished Doctor's dissertation, Michigan State University, 1964.

Cope J. Discovery Methods in Physical Education. London: Thomas Nelson and Sons, 1967.

Cratty, B. Movement Behavior and Motor Learning. Englewood Cliffs, New Jersey: Prentice-Hall, 1964.

Downey, L. The Secondary Phase of Education. New York: Blaisdell Publishing Co., 1965.

Faix, T. "Toward a Science of Curriculum: Structural-Functional Analysis as a Conceptual System for Theory and Research." Unpublished Doctor's dissertation, University of Wisconsin, 1964.

Gates, A. et al. Educational Psychology. New York: Macmillan Co., 1948.

Getzels, J. et al. Educational Administration as a Social Process. New York: Harper and Row, 1968.

Goodlad, J. The Changing School Curriculum. New York: The Fund for the Advancement of Education, 1966.

_____. and M. Richter, Jr. The Development of a Conceptual System for Dealing with Problems of Curriculum and Instruction. Report of an Inquiry Supported by the Cooperative Research Program of the Office of Education, U.S. Department of Health, Education and Welfare. Chicago: University of Chicago, 1967.

_____. School Curriculum Reform in the United States. New York: Fund for the Advancement of Education, 1964.

Griffiths, D. "Use of Models in Research." Educational Administration: Selected Readings. E. Hack et al. (eds.). Boston: Allyn and Bacon, 1965, pp. 346-57.

Gwynn, J. and J. Chase, Jr. Curriculum Principles and Social Trends. New York: MacMillan Co., 1969.

Hall and L. Dennis.(eds.). Living and Learning. Provincial Committee on Aims and Objectives of Education in the Schools of Ontario. Department of Education, 1968.

Halliday, J. Psycho-Social Medicine: A Study of the Sick Society. Heinemann, 1949.

Hanna, L. "Meeting the Challenge". What are the Sources of the Curriculum? A Symposium. Washington, D.C.: Association for Supervision and Curriculum Development, 1962.

Herrick, V. "The Concept of Curriculum Design." Toward Improved Curriculum Theory. V. Herrick, R. Tyler. (eds.). Chicago: University of Chicago Press, 1950.

Hilgard, E. Introduction to Psychology. Methuen, 1962.

Hills, R. "The Relationship Between the Educational Expectations of Social Class Groups and the Role Expectations within the Public Highschool." Unpublished Doctor's dissertation, University of Chicago, 1961.

Hoggart, R. The Uses of Literacy. Penguin, 1958.

King, R. and J. Brownell. The Curriculum and the Disciplines of Knowledge. New York: John Wiley and Sons, 1966.

Lewellar, J. "A Comparative Study of Two Methods of Teaching Beginning Swimming." Unpublished Doctor's dissertation, Stanford University, 1951.

Mager, R. Preparing Objectives for Programmed Instruction. San Francisco: Fearon Publishers, 1962.

Mathews, D. Measurement in Physical Education. Philadelphia: W.B. Saunders Co., 3rd ed., 1968.

Metheny, E. (ed.). This is Physical Education. Report Prepared by the American Association for Health, Physical Education and Recreation. Washington, D.C.: N,E.A., 1965.

Newton, J. Mathematical Principles of Natural Philosophy. Berkely: University of California Press, 1934.

Nixon, J. and A. Jewett. An Introduction to Physical Education. Philadelphia: W.B. Saunders Co., 1969.

Oberteuffer, D. Physical Education. New York: Harper and Row, 1962.

Ontario Association for Curriculum Development. Curriculum Development in a Decentralized Educational System. Fifteenth Annual Conference. Toronto: O.A.C.D., 1966.

Parsons, T. "An Approach to Psychological Theory in Terms of Theory of Actions." Psychology: A Science. S. Koch. (ed.). New York: McGraw Hill, 1959.

Passon, H. and R. Leeper (eds.) Intellectual Development: Another Look. Washington, D.C.: A.S.C.D., 1964.

Phenix,P. "The Disciplines as Curriculum Content." Curriculum Crossroads. A. Passon. (ed.). Teachers College Columbia University, 1962,pp.57-65.

Riesman, D. The Lonely Crowd. Yale University Pres, 1950.

Rollins, S. "Youth Education: Problems." Youth Education. Washington, D.C.: A.S.C.D., 1968, pp. 2-19.

Schwab, J. "Structure of the Disciplines: Meanings and Significances." The Structure of Knowledge and the Curriculum. G. Ford and L. Pugno. (eds,) Chicago: Rand McNally and Co., 1964.

Seager, R. "The Task of the Public School as Perceived by Proximity Sub-Publics." Unpublished Doctor's dissertation, University of Chicago, 1959.

Sheard, J. "The Relationship of Teaching Two Basic Swimming Strokes by Two Methods to Non-Swimmers." Unpublished Doctor's dissertation, Indiana University, 1959.

Taba, H. Curriculum Development: Theory and Practice. New York: Harcourt, World and Brace, 1962.

Tyler, R. Basic Principles of Curriculum Development. Chicago: University of Chicago Press, 1950.

_____. "The Contribution of the Behavioral Sciences to Educational Research." First Annual Phi Delta Kappa Symposium on Educational Research. F. Banghart (ed.). Bloomington, Indiana: Phi Delta Kappa, 1960.

Van Dalen, D. "Interpretative Summary of Three Philosophies." Philosophies Fashion Physical Education. Dubuque, Iowa: Wm. C. Brown Co., 1963.

Voltmer, E. and A. Esslinger. The Organization and Administration of Physical Education. New York: Appleton-Century-Croft, 4th. ed. 1967.

Wilhelms, F. and P. Diedarich. "The Fruits of Freedom." Evaluation as Feedback and Guide. Washington, D.C.: A.S.C.D., 1967.

Willgoose, C. Evaluation of Health Education and Physical Education. New York: McGraw-Hill Co. 1962.

_____. The Curriculum in Physical Education. Englewood Cliffs, New Jersey: Prentice-Hall, 1969.

Periodicals

Baker, C.M. "Survey of the Administration of Physical Education in Public Schools in the United States," Research Quarterly, XXXIII (1962), 632.

Bennis, G. "Post-Bureaucratic Leadership," Trans-action, LXI (July, 1969), 44-51.

Benoit, J.P. "Extending the Mind Through the Body," Journal of Health, Physical Education and Recreation, XXXVII (April, 1966), 28-30.

Bristow, W.H. "Approaches to Curriculum Improvement Through Curriculum Development and Research," Review of Educational Research,XXXVI (June, 1966), 349.

Bruner, S. "Education as Social Invention," Saturday Review, February, 1966, pp.70-72.

_____. "Needed: A Theory of Instruction," Educational Leadership, XX, (May, 1963), 524-25.

Clark, L., R. Klein and L. Raymond. "Recent Developments Affecting Secondary School Curriculum," School and Society,XCII, (December 26, 1964), 402-13.

Corder, W.O. "Effects of Physical Education on the Intellectual Physical, and Social Development of Educable Mentally Retarded Boys," Exceptional Children, XXXII (1966), 357-64.

Cordts, H. and J. Shaw. "Status of the Physical Education Required or Instructional Program in Four Year Colleges and Universities," Research Quarterly, XXXI (1960), 409.

Deutsch, K.W. "Mechanism, Organism, and Society: Some Models in Natural and Social Science," Philosophy of Science, XVIII (July, 1951), 230-31.

Hart, M.E., and C. Shay. "Relationship Between Physical Fitness and Academic Success," Research Quarterly, XXXV (1964), 443.

Hott, L. and M. Sonstegard. "Relating Self-Conception to Curriculum Development," Journal of Educational Research, LVIII (April, 1965), 348-351.

Hrynyk, E., and E. Miklos. "Professional Role of Orientations of Administrators," Canadian Administrator, VI (March, 1967), 21-24.

Johnson, M., Jr. "Definitions and Models in Curriculum Theory," Educational Theory, XVII (April, 1967), 127-140.

Johnson, B. (ed.). "Fact and Fancy or Separating Scientific Foundations from Unsupported Claims for Psychological, Sociological and Physiological Benefits of Physical Exercise and Formal Physical Education, Journal of Health, Physical Education and Recreation, XXX1X (November-December 1968), 25-40.

Karinger, R.L. "Physical Education Therapy," Child Study Center Bulletin, III (1966), 35-41.

Kenyon, G.S. "A Model for Physical Activity," Research Quarterly, XXXIX, (1968), 97-105.

Klohr, P.R. "Problems in Curriculum Theory Developments," Theory in Practice, VI (1967), 200-203.

Koss, R. "Guidelines for the Improvement of Physical Education in Selected Public Elementary Schools in New Jersey," Research Quarterly XXXVI (1965), 282-288.

LaPorte, W.R. "Eighth Annual Report on the Committee on Curriculum Research," Research Quarterly,VII (1936), 99.

Lawrence, G.D. "Bruner: Instructional Theory on Curriculum Theory," Theory in Practice, VIII (February, 1969), 18-24.

Leitch, A.R. "Learning Theories and Physical Education," Ontario Secondary School Teachers Federation Bulletin, May, 1967, pp. 6-149.

Lemen, M. "Implications of the Problem Solving Method for Physical Educators," Journal of Health, Physical Education and Recreation, XXXVII (March, 1966), 28, 72.

Meadows, P. "Models, Systems, and Science," American Sociological Review XXII (February, 1959), 1.

Menninger, W.C. "Recreation and Mental Health," Recreation,November, 1948, pp. 340-46.

McClure, R. "Trend in Curriculum Development," Journal of Health, Physical Education and Recreation, November - December, 1967, p. 25.

Neimeyer, F.L. "Part versus Whole Methods and Massed versus Distributed Practice in the Learning of Selected Large Muscle Activities," Sixty Two Proceedings of the Annual Meeting of the College of Physical Education Association (1958), 122-25.

Oliver, J.N. "Effect of Physical Conditioning Exercise and Activities on the Mental Characteristics of Educationally Sub-normal Boys," British Journal of Educational Psychology, XXVIII (1958), 155-65.

Purdy, B.J. and M.L. Stallard. "Effect of Two Learning Methods and Two Golf Grips on the Acquisition of Power and Accuracy in the Golf Swing of College Women," Research Quarterly, XXXVIII (October,1967), 480-84.

Robinson, N. "Teacher Professionalism and Bureaucracy in School Organization," Canadian Education and Research Digest, VII (March, 1967), 29-46.

Rorick, G.L. and R. McKee. "Study of Twenty Third Grade Children Exhibiting Extreme Levels of Achievement on Tests of Motor Proficiency," Research Quarterly, XX (1949), 142-152.

Shaw, F. "The Changing Curriculum", Review of Educational Research, XXXVI (June, 1966), 343-50.

Smith, M. "A Hard Look at Teaching Methods," Alberta Teaching Association, Health, Physical Education Council Bulletin, VII (Summer 1968), 4-14.

Still, J.W. "Boredom - The Psycho-Social Disease of Aging," Gereatics, September, 1957, p. 577.

Weber, J.R. "Relationship of Physical Fitness to success in College and to Personality," Research Quarterly, XXIV (1954), 471-474.

Wedemeyer, C.A. "Gifted Achievers and Non-achievers," Journal of Higher Education, XXIV (1953), 25.

B29960